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The Health and Nutrition of Children in Military Families

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Foreword

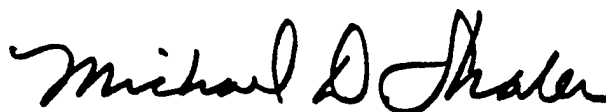
This research study was designed to obtain baseline data for a number of health and nutrition behaviors of preschool children living in military families. The survey data was compiled from about 4,500 surveys returned from military families stationed around the world.

The data outlined a large number of positive factors concerning the military preschoolers. Among these are the facts that three-fourths of the children in military families ate three meals a day, seven days a week; and almost all the children were sharing at least one meal a day with a parent. Additionally, the food habits of families and children tended to support healthy diets. In the area of family physical fitness, the majority of fathers reported exercising at least three times per week, but only 50% of the mothers did so, and some 24% of the mothers reported never exercising. Most preschool children, however, engaged in active play at least three hours per day on both weekdays and weekends. Reflecting an emphasis on weight control by the military services, fewer military parents were overweight than a comparable civilian sample.

In the area of childhood immunizations, the data reflect that the preschool children in our sample were above national vaccinations levels in some areas, but overall, the Childhood Immunization Initiative guidelines continue to require emphasis and the success of vaccination outreach programs should be monitored. Over 60% of the families were using some form of support services, while only 35% utilized the Family Support Centers and Community Support Centers on military installations. Also, compared to civilian children, fewer children in military families were enrolled in preschool programs.

Most families reported that they were satisfied with their roles as parents, with their relationships with their children, and expressed a sense of family cohesion. Additionally, the majority of families reported they had adjusted to the demands of being a military family, and many felt that being part of a military family helped their family members feel a sense of independence and to keep physically fit.

The data in this report affirm the long term efforts by the Department of Defense to provide budgetary support for family programs, and in particular those programs focused on military preschoolers. The overall condition of the military family appears to be better than that of their civilian counterparts, but there remain a number of areas which warrant continued emphasis and support. These investments, according to our data, build families which are more fit and more cohesive, and thus contribute to the readiness of our armed forces.



Michael D. Shaler
Director

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Executive Summary

Introduction

The Health and Nutrition of Children in Military Families survey was conducted by the Military Family Institute (MFI) at Marywood University. The purpose of the study was to obtain baseline data for a number of modifiable and interrelated health and nutrition behaviors of preschool children living in military families. The survey focused on five main content areas for these children and their families:

- Diet and Eating Habits
- Physical Activity and Television Viewing
- Weight Status
- Environmental Tobacco Smoke Exposure
- Health of the Children.

Other key areas examined were:

- Characteristics of the Children and their Families
- Use of Support Services
- Family Experiences
- Military Experiences.

Methodology

A questionnaire consisting of 101 items was sent during Summer 1996 to a world-wide stratified, probability sample of 10,691 military parents who had a child born between 1990 and 1992. The response rate for this study was 48.23%. This figure is within the range to be expected from mailed surveys to military family members.

In response to input from the Office of Family Policy, Support & Services (OFP), study content areas were analyzed by the following subgroups:

- Service [Army, Navy, Marine Corps, and Air Force]
- Rank [Junior Enlisted (E-1 to E-4), Senior Enlisted (E-5 to E-9) and Officers (W-1 to W-5; O-1 to O-10)]
- Parental Employment Status [Two Parents or One Parent Working]
- Duty Location [Continental US (CONUS) or Overseas (OCONUS)]
- Family Housing [On Base or Post, Off Base or Post]
- Sure Start/Head Start Enrollment & Eligibility [Enrolled, Eligible but Not Enrolled, and Not Eligible]
- Day Care, Preschool, or Kindergarten [Attends, Does Not Attend].

Frequency distributions and univariate descriptive statistics were computed for the study content areas. This report summarizes the major findings for each area. Only significant differences that have substantive meaning have been reported. Otherwise, the reader should assume that no practical differences exist. Where possible, comparisons were made between military families and civilian populations.

Survey Results

The following information describes the responses of sampled families. Each content area is discussed in terms of strengths, areas of concern, and implications.

Diet and Eating Habits

Strengths

- Many families reported sharing shopping and cooking responsibilities.
- The majority of families did their grocery shopping at the commissary, and thus supported the military community.
- The food habits of families and children tended to support healthy diets.
- Most children ate an adequate number of servings from all food groups.
- Nearly 75% of children in military families ate three meals per day, seven days per week.
- Almost all children were sharing at least one meal per day with a parent.
- Children in military families were given sufficient opportunities to supplement their food intake with snacks.
- Most parents did not report controlling behavior during meal times.

Areas of Concern

- At a time when the military is exploring the closure of selected commissaries world-wide, it is of interest that over 50% of the responding families reported doing at least some of the family shopping at local supermarkets.
- More than 25% of the families made changes in their eating habits due to either cost or availability of foods and these changes most often included eating fewer fruits and vegetables and less fish.
- Children of enlisted personnel as well as children who were enrolled in or eligible for Sure Start/Head Start ate more high fat foods.
- Almost 12% of the children missed three or more meals per week and this occurred most often in families of enlisted personnel and those whose children were enrolled in or eligible for Sure Start/Head Start.

- Many families reported changes in their eating habits when the military member was away; these changes often included consuming more packaged foods and eating at fast food restaurants more often.
- Families of enlisted personnel and those whose children were eligible but not enrolled in Sure Start/Head Start reported more controlling behavior during meal times.

Implications

- Educational efforts should encourage families to make more low-fat choices so that by age five the children's diets will contain no more than 30% of calories from fat.
- Snacks supply an important source of nutrients for preschool children—more information is needed regarding the types of snacks eaten by these children.
- Nutrition promotion programs should target the increased use of healthy foods such as fruits, vegetables, and low-fat dairy products at meal times and for snacks.
- Practical nutrition information on quick/easy low-fat meals and healthy choices at fast food restaurants would be valuable to families during times when the military parent is away.
- The utilization of civilian supermarkets may be decreasing the use of commissaries, thus reducing revenue.
- Nutrition education programs should focus on helping parents assume responsibility for providing children with a variety of healthful foods in a positive, social environment with little parental control.

Physical Activity and Television Viewing

Strengths

- Most children engaged in active play either indoors or outside at least three hours per day on both weekdays and weekends.
- The majority of fathers reported exercising at least three times per week.

Areas of Concern

- Only 50% of mothers reported exercising three or more times per week, and 24% reported never exercising.
- Preschool children in military families watched more television than a comparable sample of civilian children.

Implications

- Parents should engage in physical activity with their children and encourage a positive attitude about exercise. Verbal prompts and parental modeling

are two of the most effective actions that parents can take to increase their children's activity level.

- The services can assist parents by expanding recreation and entertainment programs for preschool children and their families.
- Parents should watch television with their children, discuss what they are viewing, and teach them to be discerning viewers.
- Family Service Center/Community Support Center (FSC/CSC) personnel can educate parents, especially enlisted personnel, working parents, and those whose children are eligible for or enrolled in Sure Start/Head Start about the pros and cons of television viewing.

Weight Status

Strengths

- Fewer parents were overweight than a comparable civilian sample.

Areas of Concern

- Over 17% of children were classified above the 95th percentile (a marker for obesity) for weight by height and 12% were below the 5th percentile (a marker for malnutrition) on the National Center for Health Statistics (NCHS) growth charts.
- Although fewer military parents were overweight compared to civilians, it is still a concern that over 20% of military parents were overweight.
- Parental perceptions regarding their children's weight status did not accurately reflect the reported anthropometrics of the children.

Implications

- The higher-than-expected prevalence of underweight and overweight children should be further investigated by medical personnel at a well-child check-up.
- Educational programs should emphasize the positive message "*be more active*" rather than the negative message "*eat less food*."
- Programming that supports a healthy lifestyle for parents should continue.

Environmental Tobacco Smoke Exposure

Strengths

- Military families reported that a smoker resided with their children less often than did a comparable civilian sample.

Areas of Concern

- Almost 40% of children were exposed to environmental tobacco smoke (ETS) and many were exposed in more than one location.
- Families of enlisted personnel and those whose children were enrolled in or eligible for Sure Start/Head Start most often exposed their children to ETS.

Implications

- Programs are needed that inform parents of the potential risks of ETS and assist individuals in smoking cessation.

Health of the Children**Strengths**

- Families rated their children's health positively and reported few occurrences of illness.
- Most families who utilized the Exceptional Family Member Program (EFMP) were satisfied with the services provided.
- The majority of families used military medical facilities for their children's health care.
- It is encouraging that so many military children visited a dentist.

Areas of Concern

- Although preschool children in military families were above national vaccination levels for measles-mumps-rubella (MMR) and hepatitis B (Hep B); fewer children were vaccinated against diphtheria and tetanus toxoids and pertussis (DTP), polio and H. influenza b (Hib).
- Except for MMR, children in military families were not meeting the Childhood Immunization Initiative (CII) guidelines.
- There were inconsistencies in reported eligibility and participation rates for EFMPs and Individualized Education Program (IEPs).
- More than one third of families reported an overall dissatisfaction with military medical care.

Implications

- The military, in conjunction with national efforts for increased immunization levels, should continue vaccination outreach programs in order to meet CII guidelines.
- Medical personnel, installation relocation services, as well as family support staff should stress the importance of following through on vaccinations.
- The reasons for the inconsistencies in utilization rates of EFMPs and IEPs should be identified so that eligible children have access to the full range of services available.

- Further research should examine the reasons for the reported dissatisfaction with military medical care and the implications for children when they do not have continuity of care with one particular medical provider.
- More outreach and education is needed so that all children receive the dental care that they need.

Use of Support Services

Strengths

- It is encouraging that over 60% of families were using some form of support services either on the installation or in the community.
- Over 50% of the children were enrolled in educational programs such as preschool or child development centers.

Areas of Concern

- Only 35% of families utilized the FSC/CSC.
- Families who were eligible but not enrolled for Sure Start/Head Start were not using the FSC/CSC as often as those enrolled.

Implications

- Emphasis on outreach to encourage greater utilization of installation and community support services should be pursued.
- Since junior enlisted personnel and families enrolled in Sure Start/Head Start most often used the FSC/CSC, these are excellent places to disseminate health and nutrition information.
- Families with a child eligible but not enrolled in Sure Start/Head Start comprise a potentially vulnerable group and should be targeted for outreach.
- Extending nutrition programs, such as the Special Supplemental Program for Women, Infants and Children (WIC), to families living OCONUS would benefit potentially eligible families who currently do not have access to these programs.
- Continued support for, and expansion of, Child Development Centers would allow more military children an excellent opportunity for learning and social development.

Family Experiences

Strengths

- Most families were satisfied with their roles as parents, with their relationships with their children, and expressed a sense of family cohesion.

Areas of Concern

- Families of junior enlisted personnel and those who were eligible/ enrolled in Sure Start/Head Start reported the least amount of family satisfaction or a sense of family cohesion.

Implications

- It is likely that families of junior enlisted personnel and those who were enrolled in or eligible for Sure Start/Head Start would benefit from parenting education efforts.

Military Experiences

Strengths

- The majority of families reported they had adjusted to the demands of being a military family.
- Many families felt that being part of a military family helped their family members to feel a sense of independence and to keep physically fit.

Areas of Concern

- Attention is needed to the 18% of families who felt that they had not adjusted to being a military family.
- Being part of a military family was reported as hindering many families' ability to eat meals together and to do things as a family.

Implications

- Continued supportive programming to military members and their families will enhance their adaptation to the military as a way of life.
- Further research can clarify the effects of military stressors on the health and nutrition of children in military families, especially those families with young children.

Conclusion

This study identifies numerous strengths and concerns for military preschoolers. The implications, which conclude each content area, address the various issues that surfaced in the analysis and interpretation of the data. The technical report highlights a few key areas that require attention in order to prevent long-term health problems for the children.

While military children are similar to their civilian counterparts in many of the areas studied, this does not obviate the necessity to consistently improve the health and nutrition behaviors of the preschoolers. The Department of Defense should continue present programming, while at the same time focus efforts and resources on the targeted areas of concern.

The Health and Nutrition of Children in Military Families

Contents

1. Introduction	1
2. Research Questions	1
3. Methodology	2
3A. Sampling Design	3
3B. Construction of Instrument	4
3C. Data Collection	4
3D. Response Rate	5
3E. Data Analysis	6
Weighting	6
Subgroups for Analyses	6
Statistical Analyses	7
4. Characteristics of the Sample	9
4A. Demographics of Parents	9
4B. Gender and Age of the Children	10
4C. Residence of the Family	10
4D. Family Separation	10
4E. Number of Moves	11
5. Diet and Eating Habits	12
5A. Construction of Instrument	13
5B. Results	14
Family Cooking & Shopping	14
Family's Food Habits	14
Servings from USDA Food Group Pyramid	18
Children's Eating Patterns	20
Children's Eating Patterns - Meals at Home	21
Family Eating Patterns During Service Member Absence	22
Parental Control of Children's Eating Habits	23
5C. Discussion	24
5D. Summary	27
6. Physical Activity & Television Viewing	29
6A. Construction of Instrument	29
6B. Results	30
Children's Physical Activity	30
Parents' Physical Activity	31
Children's Television Viewing	31
6C. Discussion	33
6D. Summary	35

7. Weight Status	36
7A. Construction of Instrument	36
7B. Results	37
Children's Weight Status	37
Parents' Weight Status	38
7C. Discussion	39
7D. Summary	41
8. Environmental Tobacco Smoke Exposure	42
8A. Construction of Instrument	42
8B. Results	43
8C. Discussion	44
8D. Summary	44
9. Health of the Children	45
9A. Construction of Instrument	46
9B. Results	46
Family History	46
Children's Health	46
Vitamins	48
Children's Immunizations	48
Programming for Children with Disabilities/Handicaps	50
Medical Care	50
Dental Care	52
9C. Discussion	53
9D. Summary	55
10. Use of Support Services	57
10A. Construction of Instrument	58
10B. Results	58
Support Services	58
Day Care, Preschool and Kindergarten	59
10C. Discussion	61
10D. Summary	62
11. Family Experiences	63
11A. Construction of Instrument	63
11B. Results	64
11C. Discussion	65
11D. Summary	65
12. Military Experiences	66
12A. Construction of Instrument	66
12B. Results	67
Adjustment to Military Family Life	67
Influence of Military on Family Functioning	67
Military Job Demands & Stressful Life Events	69
12C. Discussion	70
12D. Summary	71

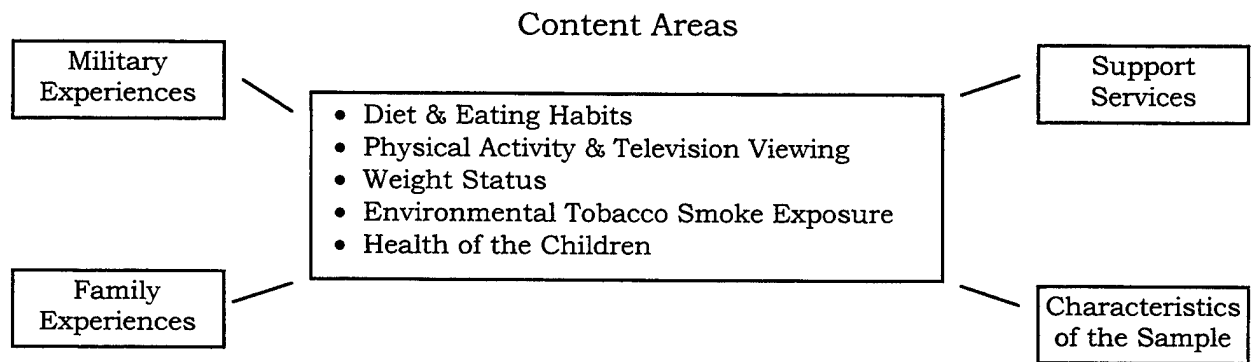
13. References	73
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14. Appendixes

Appendix A: Questionnaire	A-1
Appendix B: Characteristics of the Sample.....	B-1
Appendix C: Diet and Eating Habits.....	C-1
Appendix D: Physical Activity & Television Viewing.....	D-1
Appendix E: Weight Status.....	E-1
Appendix F: Environmental Tobacco Smoke Exposure.....	F-1
Appendix G: Health of the Children.....	G-1
Appendix H: Support Services	H-1
Appendix I: Family Experiences	I-1
Appendix J: Military Experiences.....	J-1

1. Introduction

As the proportion of service men and women with spouses and children grew after World War II, awareness of the impact of families on the well-being and effectiveness of the Armed Forces increased dramatically (Albano, 1994; U.S. Army Chief of Staff, 1983). Recognizing the importance parents place on the health and well-being of their children in assessing family quality of life, the Office of Family Policy, Support and Services (OFP) and the Military Family Institute (MFI) of Marywood University initiated this research. The purpose of the study was to obtain baseline data for a number of modifiable and interrelated health and nutrition behaviors of preschoolers (three- to five-year-olds). This report presents descriptive analyses of these behaviors for the children and their families. The following diagram presents a conceptualization of the major content areas for the study.



2. Research Questions

This report addresses several research questions:

- What are the diet and eating habits of preschool children in military families?
- What are the patterns of physical activity of these children?
- What is the weight status of preschool children who have an active duty parent(s)?
- What are the children's levels of environmental tobacco smoke exposure?
- What is the health status of the children and what are their parents' perceptions of the health-related services for their children?
- How often do families use support services, including military and community resources?

- What are the family experiences of respondents and how do military parents rate their relationship with their preschool children?
- How satisfied are families with military family life and what are their military experiences (i.e., separation, relocation, and duty stress)?
- What are the significant differences in study content areas across subgroups of respondents?
- How do the findings for the health and nutrition of military preschool children compare to recent studies of civilian populations?

3. Methodology

The research project was conducted in two phases. The Phase I component was used to validate the questionnaire and procedures which were to be utilized in Phase II. During Phase I (March 1996), both quantitative and qualitative data were collected from four installations (two CONUS and two OCONUS). This phase provided installation-specific information, therefore it was not intended to be generalizable to all military families with preschool children. MFI personnel completed extensive analysis of all returned surveys and summarized qualitative data obtained from discussion groups with military personnel and their families at the four locations. The Phase I data led to revisions of individual questionnaire items, deletion of weak variables, and the addition of new items to the instrument used in Phase II. Procedures were also refined in order to enhance the response rate in Phase II. Results were provided in a September 30, 1996 report to the Office of Family Policy, Support and Services.

The second phase of the study provides a broader understanding of the health and nutrition of preschool children living in military families. Phase II utilized a mailed survey which was sent to a world-wide stratified, probability sample of 10,691 military parents with preschool children. Results from Phase II are included in this report. Specifics, including sampling design, instrument construction, data collection, response rate and data analysis, are delineated in the following sections.

3A. Sampling Design

The sampling frame selected was the December 1995 Defense Enrollment Eligibility Reporting System (DEERS) file of children born between 1990 and 1992 whose sponsors were also in the Active Duty Military File. Both of these files are maintained by the Defense Manpower Data Center (DMDC). The sampling frame was stratified on the following variables: service (Army, Navy, Marines Corps, and Air Force); duty location (CONUS/OCONUS); and rank (Officer/Enlisted). After stratification, a probability sample was drawn in Spring 1996.

Since Kerce (1995) and Caliber (1995) have reported low response rates for questionnaires mailed to military families, a conservative expected n of 30% was used for calculating minimum sample size per cell. Cohen (1988) and Hunter and Schmidt (1990) state that moderate effect sizes of about 0.50 are generally worth detecting. The d value of 0.50 was used in a power calculation to ascertain the appropriate number of families to sample. For a power of 0.9 p (type 2 error) = 0.1 with a d value of 0.5, α = 0.05 (2-tailed), the minimum number of completed surveys per cell is 85, for a target of 5,136 respondents. As can be seen from Table 3A-1, this sampling plan resulted in unequal sampling fractions for six of the cells, particularly for Navy and Marine Corps Officers OCONUS.

Table 3A-1
Sampling Fractions

			Population N	Number Sampled	Expected n	Sampling Fraction
Air Force	Enlisted	CONUS	43085	1618	485	0.011267
Air Force	Enlisted	OCONUS	11921	448	134	0.011267
Air Force	Officer	CONUS	11326	425	128	0.011267
Air Force	Officer	OCONUS	2561	283	85	0.033190
Army	Enlisted	CONUS	59710	2243	673	0.011267
Army	Enlisted	OCONUS	18012	676	203	0.011267
Army	Officer	CONUS	11857	445	134	0.011267
Army	Officer	OCONUS	2767	283	85	0.030719
Marine Corps	Enlisted	CONUS	14713	553	166	0.011267
Marine Corps	Enlisted	OCONUS	3245	283	85	0.026194
Marine Corps	Officer	CONUS	2548	283	85	0.033359
Marine Corps	Officer	OCONUS	497	283	85	0.171026
Navy	Enlisted	CONUS	48287	1814	544	0.011267
Navy	Enlisted	OCONUS	13003	488	147	0.011267
Navy	Officer	CONUS	7544	283	85	0.011267
Navy	Officer	OCONUS	1679	283	85	0.050625

3B. Construction of Instrument

The questionnaire used in Phase II was constructed after extensive review of the literature, and analyses of both the quantitative and qualitative data obtained in Phase I. The Phase II survey contained 101 items. Wherever possible, questions from existing instruments were used in order to make comparisons with non-military populations. A detailed discussion of the specific items is included within each section. A copy of the questionnaire is contained in Appendix A.

3C. Data Collection

Data for Phase II were collected from May through August, 1996. Questionnaire packets were mailed to selected families; the parent who was most familiar with their children's daily routine was asked to complete the survey. Families with more than one child in the age range were asked to complete the survey for the child who had the most recent birthday.

The questionnaire packet contained the following items:

- A cover letter from the Principal Investigator describing the project and the intent of the study
- A letter of support from Linda Smith, Director, OFP
- A copy of the questionnaire
- An acknowledgement form indicating either that the survey had been completed and returned, or that the family was unable to participate
- Two business reply envelopes - one for the survey and one for the acknowledgement form.

A second mailing with a new cover letter encouraging support was sent during the first two weeks of June 1996, and a third packet was sent during July 1996 to nonresponding families. During this time, the packets returned to the MFI with a change of address label were re-sent to the new addresses. All respondents who returned the acknowledgement form indicating that they had completed the survey were mailed a \$5 gift certificate redeemable at the Base or Post Exchange.

3D. Response Rate

The response rate for this study was 48.23% (Table 3D-1). Several factors may contribute to the accuracy of reported response rates (Caliber, 1995). The number of envelopes returned as undeliverable should be considered conservative since some may have become lost in the postal system. Additionally, some families who did not have the selected child residing with them may not have returned the acknowledgement form, thus remaining in the pool of potential respondents, when in fact, they were ineligible.

Table 3D-1
Survey Response Rate

Number Sampled	No Address Available ¹	Undeliverable ²	Unable to Participate ³	Number Available	Number Completed ⁴	Response Rate ⁵
10691	98	870	368	9355	4512	48.23%

Note:

1. Some names in the sample from the DEERS file contained neither a home nor a unit address.
2. A survey was determined undeliverable if both the home and unit address were returned as undeliverable and therefore, the family was unavailable to participate.
3. A family was unable to participate if either the child lived in another household or the family reported that the child was physically disabled in such a way as to make the child significantly different from other children in this sample.
4. There were 4,590 surveys returned. From this total, 78 were eliminated due to either not having a parent who was an active duty military member or detection of significant response errors that rendered the survey data unusable.
5. The response rate was calculated as the number completed divided by the number available.

Analysis for potential response bias found differences in response rates across the four services (Table 3D-2). Larger differences were apparent between ranks (officers greater than enlisted) and for duty location (CONUS greater than OCONUS). These differences are consistent with the response rates of other mailed surveys (Caliber, 1995).

Table 3D-2
Response Rate by Service, Rank & Duty Location

	Number Sampled	Number Available	Number Completed	Response Rate
Air Force	2667	2583	1328	51.41
Army	3209	3063	1375	44.89
Marine Corps	1193	1139	501	43.99
Navy	2654	2570	1231	47.90
Junior Enlisted	2273	2157	607	28.14
Senior Enlisted	5120	4935	2455	49.75
Officer	2330	2263	1415	62.53
CONUS	7061	6782	3491	51.47
OCONUS	2662	2573	983	38.20

3E. Data Analysis

Data from the surveys were collected in scannable booklets. These were scanned with an NCS OpScan 5 Optical Mark Reader. The data were cleaned with respect to out of range values and blatant response inconsistencies. The Statistical Package for the Social Sciences (SPSS) version 7.0 was utilized for data storage, management, and analyses.

Weighting

Due to the variation in response rates across services and subgroups, weights were applied to the data. This process made the final analysis more representative of the population as a whole. Weights were calculated for service, race, rank and duty location strata. For example, weights were calculated for Army/White/Enlisted/CONUS and Navy/Black/Officer/OCONUS. Due to the small numbers of respondents in some cells, several strata needed to be collapsed for purposes of weight calculation. For example, for Air Force/Other Races/Officer, CONUS and OCONUS were combined. After calculations, a total of 35 different weights were applied.

There were two goals for this project, and thus two separate weights were applied to the data set. The first goal was to provide baseline data about the population of preschoolers in all military families with respect to their health and nutrition. Therefore, weights were calculated that made the data set more representative of military families as a whole. These weights were applied for analyses of the total sample as well as for analyses of all subgroups except service. The second goal was to provide comparisons across services. Therefore, weights were calculated that were scaled independently within each service. These weights were applied only to analyses that examined differences across services.

Subgroups for Analyses

In response to input from the OFP, study content areas were analyzed by the following subgroups of respondents:

- Service [Army, Navy, Marine Corps, and Air Force]
- Rank [Junior Enlisted (E-1 to E-4), Senior Enlisted (E-5 to E-9) and Officers (W-1 to W-5; O-1 to O-10)]
- Parental Employment Status [Two Parents or One Parent Working]
- Duty Location [Continental US (CONUS) or Overseas (OCONUS)]

- Family Housing [On Base or Post, Off Base or Post]
- Sure Start/Head Start Enrollment & Eligibility [Enrolled, Eligible but Not Enrolled, and Not Eligible]
- Day Care, Preschool, or Kindergarten [Attends, Does Not Attend].

Statistical Analyses

Frequency distributions and univariate descriptive statistics were computed for the study content areas. This report summarizes the major findings for each area. Some of the totals for the descriptive statistics may not add up to 100% due to rounding.

Both parametric and nonparametric techniques were utilized for subgroup comparisons. Chi-square analysis was used when questions were measured at the nominal level. Kruskal Wallis or Mann-Whitney U analyses were used for items measured at the ordinal level. Finally, one-way analysis of variance (ANOVA) was used for questions which were interval or ratio level. Prior to using ANOVA, Levene's test for homogeneity of variance was used to check the tenability of the equal variance assumption. When the results of Levene's test indicated heterogeneity of variances, the skewness and kurtosis of the dependent variable were examined. If these were found to be less than 1.0, approximate normality was assumed and ANOVA was utilized. However, when approximate normality could not be assumed, analyses utilizing nonparametric procedures (Kruskal Wallis or Mann-Whitney U) were undertaken.

Due to the large number of group comparisons run on the data, a conservative alpha value of 0.01 was used as the criterion for statistical significance of subgroup differences. When multiple Mann-Whitney Us were utilized to assess data with a subgroup, the Bonferroni adjustment procedure was used to make the alpha level more rigorous on each of the separate tests (i.e., the sum of the separate alpha levels did not exceed the desired $\alpha = 0.01$).

Significant ANOVAs were followed by post-hoc comparisons using the Scheffe technique to determine which means among subgroups were significantly different. All post-hoc analyses used an alpha value of 0.01. Effect sizes (*d*) were reported for the significant differences in each ANOVA. Cohen (1988) provides some "rule of thumb" guidelines for interpreting the relative magnitude of *d* values. Small effect sizes (*d* = .2) are generally not considered "visible to the naked eye." Medium effect sizes (*d* = .5) can be thought of as "visible to the naked eye" or as differences that individuals would generally notice during the course of their everyday experiences. Large effect sizes (*d* = .8) are generally grossly perceptible, and thus represent large differences between groups.

Only significant differences that have substantive meaning have been reported. Otherwise, the reader should assume that no practical differences exist. Where possible, comparisons were made between military families and civilian populations.

4. Characteristics of the Sample

4A. Demographics of Parents

The majority (94%) of respondents were married; 84% reported being with their spouse or significant other for longer than five years. While the majority of families consisted of two biological parents, 8% of fathers report being a non-biological parent. Junior enlisted personnel had a higher proportion of single or cohabiting families than either senior enlisted families or officers (Appendix B, Table 1).

The respondents were highly educated with the majority (75% of fathers and 70% of mothers) reporting at least some college. Approximately 13% of mothers spoke a language other than English as their first or native language. Over half (57%) of families reported having only one parent working, while 22% reported that both parents were working full-time. In addition, 5% of families were dual military. The majority (70%) of families reported having an annual income between \$20,000 and \$49,000, yet 11% reported an annual income of less than \$20,000. Significant differences for parental employment status are listed below.

Which families were most likely to have both parents working full- or part-time?

- Families of senior enlisted personnel (47%)
- Families who lived off base or post (45%)
- Families who resided stateside (44%)

Refer to Appendix B, Table 2

The majority (92%) of families reported that the father was active duty while 14% reported that the mother was active duty. These percentages total more than 100% since 233 families were dual military. Of respondents for each service, the Army had the highest percentage of active duty mothers (15%) while the Marine Corps had the lowest (4%). The responding families of officers were less likely to have a mother who was the military member (8%), while the families of junior enlisted personnel had a larger percentage of mothers who were active duty (20%).

4B. Gender and Age of the Children

The responding families reported equal numbers of male and female preschoolers. Approximately 29% of the children were three years old, 35% were at the age of four, and 29% were five years old. The small percentage (2%) of two-year-olds was the result of parents choosing to respond for a child other than the one selected for the sample, while the percentage (5%) of six-year-olds was likely due to recent birthdays.

4C. Residence of the Family

Slightly more families (56%) lived off base or post than lived in military housing. Navy families (67%) were the most likely to live off base, while Air Force (52%) and Marine Corps (54%) families were more likely to live on base (Appendix B, Table 3). The majority of children resided in the continental United States (79%), while the next largest group were those living in Europe (10%). Families of officers (25%) were most likely to be living OCONUS, while junior enlisted families (83%) were most often living stateside (Appendix B, Table 4). The overall percentages were not very different from the distribution of military families with children in this age group (DMDC, 1995).

4D. Family Separation

Approximately 11% of respondents reported currently being separated from their spouses due to a military assignment. This number is similar to the 12% of children who were currently separated from a parent due to a military assignment. While many of the preschoolers did not experience any separation from their active duty parents in the last year (25% of families with an active duty father and 39% of families with an active duty mother), there were large numbers of children who experienced separations longer than three months (40% from their fathers and 26% from their mothers). Additionally, 14% of respondents reported that in the last year their children were separated from one or both parents for a month or longer for a reason other than a military assignment. Significant differences for spousal and family separation are provided.

Military Separation

Which families reported the most spousal separation?

- Army families (14%)
- Families of junior enlisted personnel (15%)
- Families who lived off base or post (12%)

Which children were most often separated from their parents?

- Children in Army families (15%)
- Children of junior enlisted personnel (18%)
- Those who lived off base or post (14%)

Refer to Appendix B, Tables 5 to 8

4E. Number of Moves

Most (72%) of responding families reported living at their present geographic location for longer than one year. However, the number who indicated living at their present location for less than one year may be conservative. Families who moved recently may have been among the 870 in the original sample with incorrect addresses (i.e., undeliverables). Almost half (49%) of the families reported that their children had moved two or more times as a result of a permanent change of station (PCS). Significant differences for number of moves and length of time at present duty locations are delineated below.

Which families most often reported living at their present duty locations longer than a year?

- Air Force (77%) & Navy (75%) families
- Families of senior enlisted personnel (75%)
- Families with two parents working (77%)
- Families who lived on base or post (75%)
- Families whose children attended day care/preschool (74%)

Which children moved most often?

- Children in Army families (mean = 1.80 moves)
- Children in families of officers (mean = 1.89 moves)
- Children who lived OCONUS (mean = 1.72 moves)
- Children with one parent working (mean = 1.65 moves)
- Children enrolled in Sure Start/Head Start (mean = 1.78 moves)

Refer to Appendix B, Tables 9 to 12

5. Diet and Eating Habits

Over the past thirty years a large body of evidence based on epidemiological, clinical, and laboratory investigation has established that certain dietary patterns are associated with an increased risk of chronic disease including coronary heart disease, stroke, diabetes, and certain types of cancer (U.S. Department of Health & Human Services [DHHS], 1988; National Research Council [NRC], 1989). Research summarized in the Surgeon General's Report indicates that five of the ten leading causes of death in the United States are associated with diet. The Centers for Disease Control and Prevention (CDC) emphasize that healthy eating patterns in childhood promote optimal health, growth, and intellectual development; prevent immediate health problems such as iron deficiency anemia, obesity, eating disorders, and dental caries; and may prevent long-term health problems, such as cancer, coronary heart disease, and stroke (CDC, 1996). ***Since the preschool years are a time when food habits begin to take root, it is important to gather baseline information concerning the dietary patterns of these children so that possible long-term problems can be prevented.***

The eating habits of children are formed in the social milieu of the family. Such family-related factors as parent-child relationships, parents' eating habits, educational level of parents, parents' employment status, family television viewing patterns, and family food preferences have been shown to play an important role in the development of dietary habits (Musaiger, 1993; Wolfe & Campbell, 1993; Hertzler, 1983). Meal patterns such as the consistency of meals and whether they are eaten with others also affect total dietary intake and dietary quality (Wolfe & Campbell; Nicklas, Bao, Webber & Berenson, 1993; Redd & deCastro, 1992). Positive adult companionship at mealtimes is likely to lead to a more adequate food and nutrient intake (Stanek, Abbott & Cramer, 1990).

Socioeconomic status, family structure, ethnicity, and parental concern and control over food intake all have an effect on the quality and diversity of children's diets (Kumanyika, 1993; Wolfe & Campbell, 1993; Johnson & Rogers, 1993; Lissau, Breum, & Sorenson, 1993; Aljadir, 1988; Birch, 1992). The best predictor of children's ability to regulate their energy intake was parental control at meal time. Mothers who were more controlling of their children's food consumption had children who were less able to self-regulate food intake. Additionally, heavier children in general had the most problems in regulating their caloric intake (Johnson & Birch, 1994).

Since research has demonstrated that family life influences diet and eating habits, it makes sense to examine the relationship between familial factors (e.g., rank, parental employment status, and family housing) and the health and nutrition of preschool children. It makes particular sense in the context of the military, where demanding work schedules and frequent family separations might be expected to have an effect upon diet and eating patterns.

5A. Construction of Instrument

Questions regarding the children's eating patterns were adapted from the Young Children's Diet Assessment Questionnaire (Dennison, 1994). This instrument consists of seventeen items. It evaluates children's food habits and is used as an indicator of dietary fat and cholesterol intake.

The Control Subscale of the Child Feeding Questionnaire (Sullivan & Birch, 1994) was included to examine how parental conduct and concerns about eating habits influence children's eating patterns. The eleven items were measured on a five-point Likert scale. Scores were totaled to form a scale score with an alpha reliability of 0.66. The higher the score, the greater the amount of parental control during meal times.

Additional questions assessed the family's food shopping and meal preparation habits, as well as their eating patterns. Questions regarding changes in the family's food habits due to the cost or availability of foods were added in response to concerns raised by many families during the discussion groups in Phase I. A series of questions, which assessed the number of servings children ate from each of the food groups, were also added in response to Phase I information. Parents were also asked to describe any idiosyncrasies in their children's eating patterns due to food preferences or food intolerances. Some of these items were adapted from instruments previously used in research with military families (Johnson, Webber, Harsha, Berenson & Powers, 1993), others were developed by MFI team members.

5B. Results

Family Cooking & Shopping

Mothers were both the primary cook (66%) and shopper (67%) in most families, however, 26% of parents were sharing these responsibilities. While 88% of families indicated that they shopped for food at the commissary, 57% also reported shopping at a supermarket or grocery store. Most (81%) families felt that when buying food, price was not more important than nutrition. Significant differences for cooking and shopping are reported below.

Which families most often shared cooking responsibilities?

- Navy (29%) & Air Force (29%) families
- Families of junior (28%) & senior enlisted personnel (28%)
- Families in which both parents worked (34%)
- Families who lived stateside (27%)

Which families most often shared shopping responsibilities?

- Families of junior (34%) & senior enlisted personnel (28%)
- Families in which both parents worked (31%)
- Families whose child was enrolled in (30%) or eligible for (28%) Sure Start/Head Start

Refer to Appendix C, Tables 1 to 3

Family's Food Habits

In general, most (93%) of the responding families said their children's diets consisted of foods typically consumed by children in the United States. Army families (9%), those families who lived OCONUS (11%), and those whose children were eligible but not enrolled in Sure Start/Head Start (13%) most often reported non-typical dietary patterns (Appendix C, Tables 4 to 5).

Families were asked to identify foods that their children did not like and/or made their children sick. There were four items which were identified by at least 20% of the families as foods that their children did not like. These included beans (30%), vegetables (27%), yogurt (23%), and fish (22%). Few families reported foods which caused their children to become ill. However, the

most frequently mentioned items were from the milk group and included milk (2%), yogurt (1%), and cheese (1%).

Families were also asked to indicate whether their eating patterns changed due to either cost or availability of food at their current duty station. Changes due to cost of food were indicated by 31% of the families, while 25% reported changes as a result of availability. Of those who reported changes due to cost, many ate less fish (52%), fewer fresh vegetables (50%), fewer fresh fruits (49%), and less meat (49%). Additionally, these families reported eating more bread/grains/rice/pasta (51%). Of those who reported changes due to availability, many ate fewer fresh vegetables (49%), fewer fresh fruits (45%), and less fish (43%). Many families also reported eating more grains (35%) and fresh fruits (33%) as a result of availability.

Respondents were asked about specific family food habits related to fat and cholesterol consumption. Overall, the majority reported utilizing behaviors that, if followed on a long-term basis, would tend to support a healthier diet (Table 5B-1).

Table 5B-1
Family's Food Habits

	Often, Usually or Always		Sometimes, Rarely / Never	
	n	%	n	%
Served Chicken Baked/Broiled (n=4388)	3305	75.3	1083	24.7
Remove Skin From Chicken (n=4287)	2896	67.6	1391	32.4
Served Extra-lean Hamburger (n=4193)	3061	73.0	1132	27.0
Served Hot Dogs (n=4361)	276	23.6	4085	76.4
Served Fish Or Chicken (n=4398)	3426	77.9	972	22.1
Served 2% Milk (n=4184)	2295	54.9	1889	45.1
Served 1% Or Skim Milk (n=3905)	988	25.3	2917	74.7
Served Reduced Fat Cheese (n=4068)	1009	24.8	3059	75.2
Served 2 Or More Vegetables At Dinner (n=4438)	2506	56.5	1932	43.5
Served Butter With Bread (n=4288)	2085	48.6	2203	51.4
Served Cheese As Snack (n=4383)	1833	41.8	2550	58.2
Served Chips As Snack/Side Dish (n=4371)	449	30.3	3922	69.7
Served Peanut Butter For Lunch (n=4269)	1691	39.6	2578	60.4
Served Eggs For Breakfast (n=4336)	1052	24.3	3284	75.7
Served Hot/Cold Cereal (n=4395)	3828	87.1	567	12.9
Served Breakfast Meats (n=4300)	300	18.3	4000	81.7
Served Sweet Rolls, Danish, Or Doughnuts (n=4233)	78	6.2	4155	93.8

Positive behaviors included serving hot/cold cereal for breakfast (87%), baked or broiled chicken (75%), fish or chicken (78%), chicken with skin removed (68%), extra-lean hamburger (73%), two or more vegetables at dinner (57%), and 2% milk (55%). Fewer families reported positive food habits such as serving 1% or skim milk (25%) or reduced fat cheese (25%). Army families,

enlisted families, and those whose children were either enrolled in or eligible for Sure Start/Head Start were least often reporting behaviors that support a healthier diet for their children.

Which families least often used behaviors that support a healthier diet?

Service

- Removed skin from chicken - Army (60%)
- Bought extra-lean hamburger - Army (69%)
- Served 1% or skim milk - Army (20%)

Rank

- Served chicken baked or broiled - junior (75%) & senior (74%) enlisted
- Removed skin from chicken - junior (63%) & senior (65%) enlisted
- Bought extra-lean hamburger - junior (65%) & senior (72%) enlisted
- Served 1% or skim milk - junior (19%) & senior (23%) enlisted

Employment Status

- Removed skin from chicken - two parents working (64%)
- Served 2% milk - one parent working (53%)

Duty Location

- Bought extra-lean hamburger - CONUS (72%)
- Served 1% or skim milk - OCONUS (21%)

Sure Start/Head Start

- Served chicken baked or broiled - enrolled (72%) & eligible (71%)
- Removed skin from chicken - enrolled (58%) & eligible (60%)
- Bought extra-lean hamburger - enrolled (62%) & eligible (69%)
- Served 1% or skim milk - enrolled (24%) & eligible (20%)

Day Care/Preschool Attendance

- Bought extra-lean hamburger - does not attend (69%)
- Served fish or chicken - does not attend (75%)
- Served hot or cold cereal - attends (86%)

Refer to Appendix C, Tables 6 to 15

Some behaviors, if exhibited routinely, would likely increase dietary fat and blood cholesterol levels. As can be seen in Table 5B-1, few families were regularly serving sweet rolls, danish, or doughnuts (6%), hot dogs (24%), breakfast meats (18%), and chips as a snack/side dish (30%). Families of junior and senior enlisted personnel, families with both parents working, families living stateside, and families whose children were enrolled in or eligible for Sure Start/Head Start most often reported behaviors which could lead to increased cardiovascular risk.

Which families most often reported behaviors that if used routinely would likely increase dietary fat and blood cholesterol levels?

Service

- Served breakfast meats - Army (21%)

Rank

- Served beef or pork hot dogs - junior (30%) & senior (25%) enlisted
- Served chips as a snack - junior (32%) & senior (32%) enlisted
- Served breakfast meats - junior (22%) & senior (20%) enlisted

Employment Status

- Served breakfast meats - two parents worked (20%)
- Served sweet rolls, danish, or doughnuts - two parents worked (7%)

Duty Location

- Served chips as a snack - CONUS (31%)
- Served breakfast meats - CONUS (19%)

Sure Start/Head Start

- Served beef or pork hot dogs - enrolled (29%)
- Served chips as a snack - enrolled (34%) & eligible (33%)
- Served breakfast meats - enrolled (23%) & eligible (21%)

Refer to Appendix C, Tables 16 to 20

Other behaviors would only become an issue if families utilized excessive amounts of the food in question (i.e., the behavior itself, if used in moderation is not likely to be linked with adverse health consequences, but overuse of the food would be problematic). Overall, families reported moderation in dietary habits (Table 5B-1) including serving butter with bread (49%), cheese as a snack (42%), peanut butter for lunch (40%), and eggs for breakfast (24%). Families of junior enlisted, those families who lived CONUS, families whose children were enrolled in Sure Start/Head Start and those who did not attend day care or preschool most often reported these potentially problematic behaviors.

Which families reported the most frequent use of foods that are linked to adverse health consequences when used in excess?

Rank

- Served eggs for breakfast - junior (36%) & senior (25%) enlisted
- Served peanut butter for lunch - junior enlisted (42%) & officers (44%)

Employment Status

- Served peanut butter for lunch - one parent worked (42%)

Duty Location

- Served butter with bread - CONUS (50%)
- Served peanut butter for lunch - CONUS (42%)

Sure Start/Head Start

- Served eggs for breakfast - enrolled (31%) & eligible (30%)
- Served peanut butter for lunch - enrolled (46%) & not eligible (41%)

Day Care/Preschool

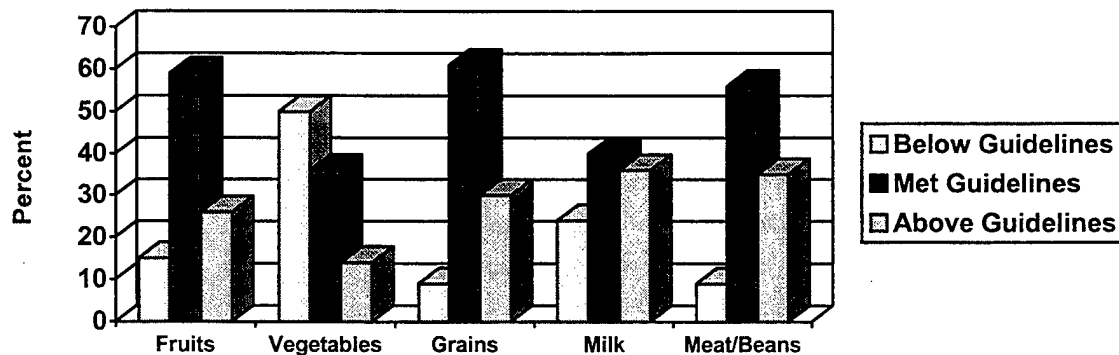
- Served eggs for breakfast - did not attend (27%)
- Served cheese as a snack - did not attend (47%)
- Served peanut butter for lunch - did not attend (43%)

Refer to Appendix C, Tables 21 to 25

Servings from USDA Food Guide Pyramid

Parents were asked to report the number of servings of fruits, vegetables, grains, milk products, and meat or beans as well as the number of snacks consumed by their children during a typical day in the past week. Figure 5B-1 demonstrates that the majority of families reported eating habits for their children that met or exceeded the recommended guidelines. Most had two or more servings of meat or beans (91%), three or more servings of grains (91%), and two or more servings of fruits (85%). However, only 76% of the children met the recommendations of three or more servings from the milk group, and fewer still (50%) met the recommendations of three or more servings of vegetables. Most (91%) of the respondents reported their children consumed two or more snacks (e.g., cookies, crackers, fruits, vegetables, cheese, candy, etc.) in a typical day.

Figure 5B-1
Servings of USDA Food Groups



Analyses by subgroups found that children in families of Marine Corps and Air Force personnel, children of officers, and those who were not eligible for Sure Start/Head Start most often fell below the recommended number of Food Guide Pyramid servings.

Which children most often fell below the recommendations?

- Children in Marine Corps and Air Force families

<u>Marine Corps</u>	<u>Air Force</u>	<u>Navy</u>
• fruit (17%)	• fruit (17%)	• vegetables (52%)
• vegetables (54%)	• vegetables (53%)	
	• milk (27%)	
- Children of officer families
 - vegetables (63%)
 - milk (28%)
 - meat/beans (12%)
- Children with one parent working
 - vegetables (53%)
- Children who lived off base or post
 - meat/beans (10%)
- Children who were enrolled, eligible, or not eligible for Sure Start/Head Start

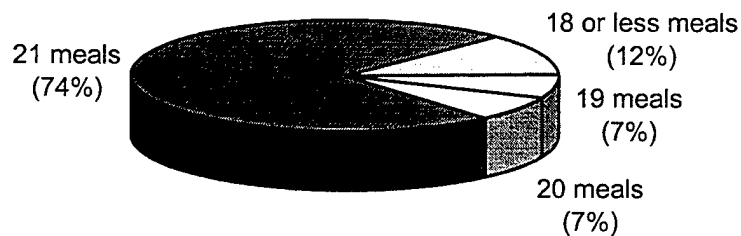
<u>enrolled</u>	<u>not eligible</u>	<u>eligible not enrolled</u>
• vegetables (53%)	• vegetables (53%)	• meat/beans (8%)
	• milk (25%)	
	• meat/beans (10%)	

Refer to Appendix C, Tables 26 to 32

Children's Eating Patterns

As can be seen in Figure 5B-2, most (74%) parents reported that their children consumed three meals per day (i.e., 21 meals per week), yet 12% missed three or more meals in the last week. The majority (82%) of families reported that their children ate breakfast every day. However, 12% indicated that their children ate breakfast less than six times per week. More families (86%) reported that their children ate lunch every day, whereas only 9% said that their children ate less than six lunches per week. Dinner was the meal most likely to be eaten on a regular basis with 94% of families indicating that their children ate dinner every day, and only 4% reporting that their children ate less than six dinners per week. Almost all of the children were able to eat at least one meal per day with the responding parent during the week (97%) and on weekends (99%). Children in families of junior and senior enlisted personnel and those enrolled in or eligible for Sure Start/Head Start were most likely to miss meals.

Figure 5B-2
Number of Meals for Preschoolers per Week



Over the last week, which children were most likely to have skipped more than one meal?

- Children in families of junior and senior enlisted personnel

<u>junior enlisted</u> <ul style="list-style-type: none"> • breakfast (14%) • lunch (10%) • dinner (5%) 	<u>senior enlisted</u> <ul style="list-style-type: none"> • breakfast (13%) • lunch (10%) • dinner (4%)
--	--
- Children who were enrolled in or eligible for Sure Start/Head Start

<u>enrolled</u> <ul style="list-style-type: none"> • breakfast (18%) • lunch (16%) 	<u>eligible not enrolled</u> <ul style="list-style-type: none"> • breakfast (14%) • lunch (11%)
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Refer to Appendix C, Tables 33 to 35

Children's Eating Patterns - Meals at Home

Dinner was the meal most likely to be eaten at home; 80% of parents indicated that their children ate this meal at home six or seven times in the prior week. Only 74% reported eating breakfast at home on an equal number of days, and only 48% ate lunch at home that frequently. Many families (50%) were able to share dinner with the entire family at least six days, while 14% never ate dinner together as a family. While very few were able to share either breakfast (6%) or lunch (7%) with the entire family at least six days in the prior week, many children were eating these meals with at least some of their family (breakfast 42% and lunch 39%). Children of junior and senior enlisted, children with both parents working, and those who attended day care, preschool or kindergarten were least likely to eat meals at home.

During the last week, which children ate at home less than six times?

- Children in Air Force families
 - lunch (54%)
- Rank differences

<u>junior enlisted</u>	<u>senior enlisted</u>	<u>officers</u>
• breakfast (30%)	• breakfast (28%)	• dinner (22%)
• dinner (21%)	• lunch (54%)	
- Children with both parents working
 - breakfast (37%)
 - lunch (68%)
- Children who lived off base or post
 - lunch (53%)
- Children who were enrolled in or eligible for Sure Start/Head Start

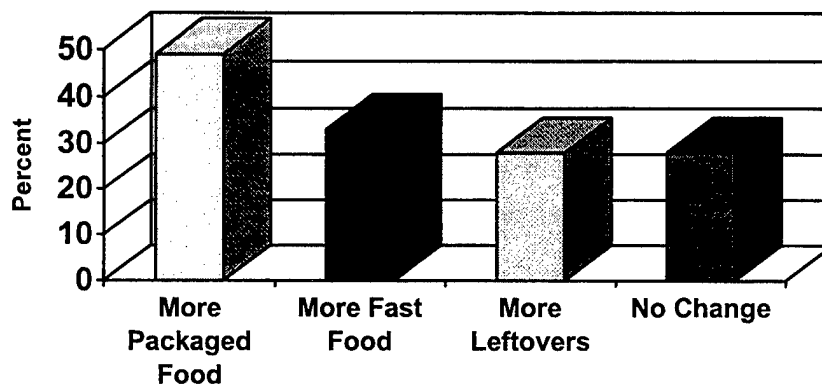
<u>enrolled</u>	<u>eligible not enrolled</u>
• breakfast (34%)	• breakfast (30%)
- Children who attended day care/preschool
 - breakfast (32%)
 - lunch (64%)
 - dinner (22%)

Refer to Appendix C, Tables 36 to 40

Family Eating Patterns During Service Member Absence

Respondents were asked about changes in the family's eating patterns when the service member was gone for a week or more. The majority (72%) of families reported that their food habits changed in some way. As Figure 5B-3 illustrates, many (49%) families reported that they prepared more packaged or quick foods, 31% ate at fast food restaurants more often, and 28% ate more leftovers.

Figure 5B-3
Changes in Family Eating Patterns
during Service Member Absence



Families of officers and those not eligible for Sure Start/Head Start reported dietary changes linked to high fat consumption during service member absence.

***During service member absence, who ate
at fast food restaurants most often?***

- Air Force families (37%)
- Families of officers (41%)
- Families with both parents working (36%)
- Families who lived stateside (34%)
- Families not eligible for Sure Start/Head Start (37%)
- Families whose child attended day care/preschool (35%)

***During service member absence, which families
prepared more packaged foods?***

- Families of officers (56%)
- Families not eligible for Sure Start/Head Start (56%)

Refer to Appendix C, Tables 41 to 44

Parental Control of Children's Eating Habits

Respondents were asked about their level of agreement with a series of eleven statements about their children's eating habits (Table 5B-2). Many parents either agreed or agreed strongly that their children should be free to eat whenever they were hungry (50%) and that their children could judge how hungry they were and how much to eat (59%).

Many parents disagreed with statements such as: children should always eat all food on his or her plate (61%), children should be strongly scolded for playing with food (60%), children should be rewarded with a tasty snack (53%), parents need to watch and control children's eating (47%), parents should reward children for eating something they did not like (46%), parents must make certain children will not eat too much (67%).

Parents were ambivalent (similar percentages of families expressed agreement and disagreement) concerning whether they had to be careful to make sure their children ate enough, if dessert was appropriate when a meal was not finished, and whether offering a tasty dessert was a good way to get their children to eat foods that were good for them.

Table 5B-2
Parental Conduct And Concerns About Eating Habits

	Strongly Disagree/ Disagree		Neither Agree nor Disagree		Agree / Strongly Agree	
	n	%	n	%	n	%
Child should eat whenever body says it is hungry (n = 4476)	1381	30.9	877	19.6	2218	49.6
Child should always eat all food on plate (n = 4489)	2748	61.2	741	16.5	1000	22.3
Child strongly scolded when playing with food (n=4479)	2701	60.3	969 *	21.6	809	18.1
Must be especially careful that child eats enough (n = 4476)	1717	38.4	917	20.5	1842	41.1
No dessert if child does not finish dinner (n = 4480)	1640	36.6	928	20.7	1912	42.7
Tasty snack is one of the best ways to reward child (n=4485)	2365	52.7	1102	24.6	1019	22.7
I need to watch and control my child's eating (n = 4484)	2098	46.8	1087	24.2	1299	29.0
Child can judge how hungry and how much to eat (n = 4485)	865	19.3	985	22.0	2635	58.8
Child gets reward for eating food not liked & healthy (n = 4481)	2043	45.6	1275	28.5	1163	26.0
Dessert is a good way to get child to eat healthy food (n = 4476)	1869	41.8	1063	23.8	1544	34.5
Must be sure that child does not eat too much (n = 4469)	3001	67.1	877	19.6	591	13.2

The eleven statements listed in Table 5B-2 comprise a scale, which measures parental control during meal times. The scale had a mean of 29.58 and a standard deviation of 5.56 (scores could range from 11 to 55). Higher scores indicated greater parental control of children's eating. Families of enlisted personnel and those with children eligible but not enrolled in Sure Start/Head Start indicated the most parental control.

Which families indicated exerting the most parental control?

- Families of junior (mean = 30.37) and senior enlisted personnel (mean = 29.77)
- Families who were eligible but not enrolled in Sure Start/ Head Start (mean = 30.49)

Refer to Appendix C. Table 45

5C. Discussion

The diet and eating habits reported by respondents were in many ways comparable to recent changes in the American diet (Lifshitz, Finch, Lifshitz, 1991). For the most part, families reported eating patterns that support health and good nutrition. It appears that families were aware of the effect of their food and preparation decisions on the level of fat in their children's diet, and were making healthy choices.

Family roles related to diet and eating habits were similar to the traditional norms exhibited in the general population (Oropesa, 1993). In the majority of families the mother was still the primary cook and shopper, but it was encouraging to see shared responsibility in one quarter of the families. In this time of increased attention to downsizing in the military, and the proposed closing of commissaries in particular (Jowers, 1997a), it is important to recognize that 88% of the families utilized the commissaries for family shopping. However, 57% of responding families also shopped at local supermarkets; thus, families were not completely dependent on the commissary for groceries.

One of the problems generally expressed by parents is difficulty persuading their children to eat healthy foods (Lucas, 1993). Families in the military reported that their children's eating preferences are similar to those of civilian children, for example, their dislike of legumes and vegetables (Hertzler, 1983). A small percentage of the military families reported that foods in the milk group caused distress, suggesting the onset of lactose intolerance. This is typical of

children in the preschool age bracket, wherein the ability to digest lactose (milk sugar) begins to diminish.

In response to concerns expressed by families during Phase I, questions were added to assess changes in food habits due to the cost and availability of food at the families' present duty locations. The findings of Phase II were consistent with concerns expressed earlier whereas over 25% of families made food habit changes due to cost and availability. Respondent families indicated that they consumed fewer fresh fruits and vegetables, as well as less fish. Although this is not problematic in and of itself, eating fewer fruits and vegetables or less fish during the preschool years may set the stage for poor dietary habits later in life.

As a group, the children ate adequate numbers of servings from all food groups. However, some eating patterns among families of junior and senior enlisted personnel, as well as those with children enrolled in or eligible for Sure Start/Head Start, will produce negative outcomes if they are habitual. Also, specific choices within the food groups, rather than the total number of servings, require attention to ensure that healthy dietary patterns are established.

Although reducing fat intake to 30% of total calories is appropriate for adults, preschool children should only gradually lower their intake so that at age five their diet contains approximately 30% of calories from fat (U.S. Department of Agriculture [USDA], 1995; Kleinman, Finberg, Klish & Lauer, 1996). The food habits of respondent families were consistent with this advice. They reflect the current dietary guidelines for children, which focus on risk reduction (prevention) rather than on management of disease. These guidelines include:

- Consuming a wide variety of foods from all food groups
- Eating regularly scheduled meals
- Consuming more grain products
- Eating more fruits and vegetables, especially dark green and deep yellow vegetables
- Drinking low fat milk products
- Using lean meat, poultry, fish, or other protein-rich foods
- Eating low-fat snacks during the day and evening since preschoolers have a limited capacity for food at one sitting (DHHS, 1991; USDA, 1995).

Consistency in the eating patterns of their children was a major strength of the families studied. It was encouraging that most (74%) of the families reported that their children ate three meals per day, seven days per week. Concern arises for the 12% of children who missed three or more meals per week and,

therefore, may not be getting consistent or adequate nutrition. Children of enlisted personnel, as well as those enrolled in or eligible for Sure Start/Head Start, were most likely to be in the at-risk group, and thus require further attention.

Children who had companionship at mealtime, with either a parent or sibling, consumed more servings from the basic food groups (Stanek et al., 1990). Only a very small percentage of parents were unable to share at least one meal each day with their preschooler. Adult companionship, either at home or in a day care situation, is a strength for these military families.

Because preschool children have small stomachs, it is appropriate that they eat more frequently than the traditional three meals. Snacking should not be viewed as problematic. If appropriate foods (i.e., fruits, vegetables, lower fat dairy products, or cereals) are offered to preschoolers, these additional "mini-meals" can serve as important sources of nutrients. The fact that 91% of military families reported their children snacked two or more times in a typical day is similar to the percentage reported in a study of civilian school-aged children (Cross, Babicz, & Cushman, 1994). A large majority of parents appear to be aware of the need to "refuel" their children on a regular basis. Further research is needed to ascertain whether parents are utilizing these additional eating occasions (even those in front of the television) to serve nutritious foods. Installation personnel should continue to provide support for appropriate nutrition education specific to snack foods and to emphasize the positive possibilities of snacks.

The lifestyle of a military family becomes even more stressful during the absence of the service member (Long, 1986). Respondents reported a number of changes in their families' eating habits. These changes, though, do not have to negatively affect children's or families' nutrition. It is only when the "suddenly single-parents" make dietary choices which are less healthy overall for their families (i.e., eating more packaged foods and eating out more often, especially at fast food restaurants) that a problem arises. Continuing the nutrition education efforts by the Office of Family Policy, Support and Services as well as other support networks will encourage more positive results under these less than optimal circumstances.

Families have the ability and responsibility to provide appropriate role models and positive reinforcements to establish healthy dietary habits for their children (Hertzler, 1983). This is especially true in the preschool years. Parents reported intelligent and mature attitudes regarding their children's eating habits. Birch, Marlin & Rotter (1984) and others have suggested that

parents of preschoolers follow specified guidelines to encourage healthy eating behavior in their children. These include:

- Avoiding struggles and issues of control over food decisions
- Providing positive and avoiding negative feedback around food and eating
- Exposing the child to a variety of foods without rewards or punishments
- Providing nutritious foods in a relaxed setting (Pipes & Trahms, 1993)
- Providing a positive feeding environment which promotes the acquisition of skills and the development of positive attitudes (Queen & Lang, 1993).

Positive parental attitudes about food intake influence healthy eating habits for children. Although families who responded to this survey were moving in the right direction, continued effort by OFP and installation personnel will help to enhance the health and well-being of these young children. Support personnel, particularly those involved in providing day care or family center programming, should continue to vigorously advocate for nutrition education programs, especially for enlisted personnel and those whose children are enrolled in and eligible for Sure Start/Head Start. Providing families with nutrition information appropriate to the preschool developmental stage is critical for the health and well-being of these children.

5D. Summary

Strengths

- Many families reported sharing shopping and cooking responsibilities.
- The majority of families did their grocery shopping at the commissary, and thus supported the military community.
- The food habits of families and children tended to support healthy diets.
- Most children ate an adequate number of servings from all food groups.
- Nearly 75% of children in military families ate three meals per day, seven days per week.
- Almost all children were sharing at least one meal per day with a parent.
- Children in military families were given sufficient opportunities to supplement their food intake with snacks.
- Most parents did not report controlling behavior during meal times.

Areas of Concern

- At a time when the military is exploring the closure of selected commissaries world-wide, it is of interest that over 50% of the responding families reported doing at least some of the family shopping at local supermarkets.
- More than 25% of the families made changes in their eating habits due to either cost or availability of foods and these changes most often included eating fewer fruits and vegetables and less fish.

- Children of enlisted personnel as well as children who were enrolled in or eligible for Sure Start/Head Start ate more high fat foods.
- Almost 12% of the children missed three or more meals per week and this occurred most often in families of enlisted personnel and those whose children were enrolled in or eligible for Sure Start/Head Start.
- Many families reported changes in their eating habits when the military member was away; these changes often included consuming more packaged foods and eating at fast food restaurants more often.
- Families of enlisted personnel and those whose children were eligible but not enrolled in Sure Start/Head Start reported more controlling behavior during meal times.

Implications

- Educational efforts should encourage families to make more low-fat choices so that by age five the children's diet will contain no more than 30% of calories from fat.
- Snacks supply an important source of nutrients for preschool children—more information is needed regarding the types of snacks eaten by these children.
- Nutrition promotion programs should target the increased use of healthy foods such as fruits, vegetables and low-fat dairy products at meal times and for snacks.
- Practical nutrition information on quick/easy low-fat meals and healthy choices at fast food restaurants would be valuable to families during times when the military parent is away.
- The utilization of civilian supermarkets may be decreasing the use of commissaries, thus reducing revenue.
- Nutrition education programs should focus on helping parents assume responsibility for providing children with a variety of healthful foods in a positive, social environment with little parental control.

6. Physical Activity & Television Viewing

Regular exercise is associated with a reduced risk of many conditions including atherosclerosis, high blood pressure, stroke, peripheral vascular disease, lower back pain, obesity, diabetes, osteoporosis, and certain kinds of cancer (Corbin & Lindsay, 1994). The problem of physical inactivity begins in childhood, where examples of sedentary behavior have been well documented (Perry et al., 1990). As many as 30% of American children average less than one-half hour of physical activity each day (McArdle, Katch, & Katch, 1994). Additionally, school-age children become less active with each passing year. (Sallis, 1993).

Patterns of physical activity, the impact of excessive television viewing, and the weight status of children have gained national attention in recent years. It is widely accepted that early intervention into any problem is the best approach. Thus, there is increased awareness of the need to examine these issues and develop programs for children as young as ages three to five. The 1990s have been referred to as the "decade of the child." Never before has the focus on children's rights, health and well-being been stronger, and pediatric nutrition is among the leading issues (Schlicker, Borra, & Regan, 1994). Although the relationship between children's activity and future health status is not well researched, physical activity patterns adopted in childhood are believed to influence lifetime fitness levels (Malina, 1994). Research that helps to quantify activity levels among preschool children and identifies those who might need intervention would have positive long-term results.

6A. Construction of Instrument

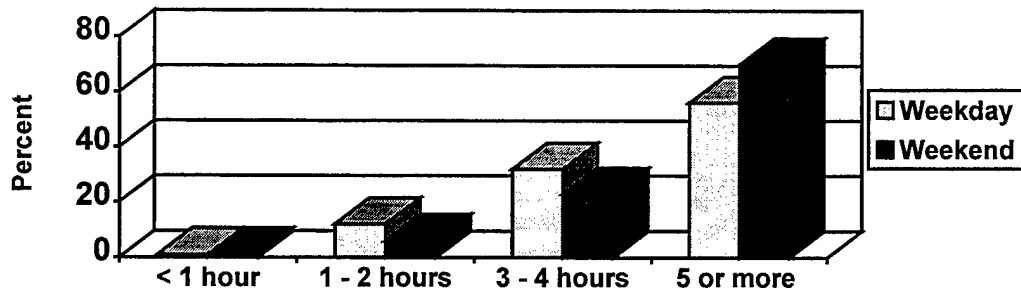
A number of items were used to examine the patterns of physical activity and television viewing habits of the children (e.g., the average number of hours per day the children were involved in physical activity, television watching, and snacking behavior while watching television, as well as parents' perceptions of their children's physical activity compared with other children). These items were either developed by MFI personnel or adapted from existing instruments (Grimston, Willows & Hanley, 1993; Slemenda, Miller, Hui, Reister & Johnston, 1991). Questions that examined the amount of parental exercise were also included.

6B. Results

Children's Physical Activity

Respondents reported that most of their children engaged in active play three or more hours per day during the week (88%) and on weekends (94%). Very few (<1%) children were inactive (Figure 6B-1). The majority (60%) of families perceived that their children were active as often as other children. Additionally, 35% of families believed that their children were more active than other children.

Figure 6B-1
Children's Physical Activity per Week



Which children were most likely to be active 3+ hours per day?

- Children of Marine Corps personnel
 - weekends (96%)
- Children of junior and senior enlisted personnel

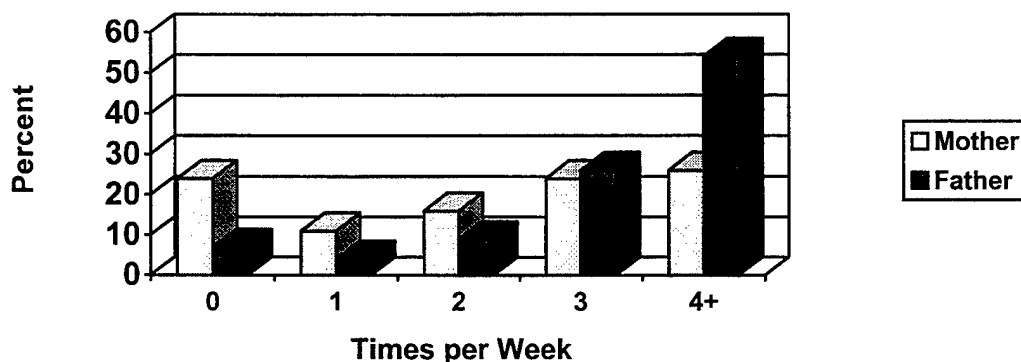
<u>junior enlisted</u>	<u>senior enlisted</u>
• weekday (91%)	• weekday (89%)
• weekend (94%)	• weekend (95%)
- Children who lived stateside
 - weekday (89%)
 - weekend (95%)
- Children who did not attend day care/preschool - weekday (89%)

Refer to Appendix D, Tables 1 to 4

Parents' Physical Activity

The majority (80%) of fathers and 50% of mothers reported exercising three or more times per week. However, 24% of mothers and 7% of fathers reported never exercising (Figure 6B-2).

Figure 6B-2
Parental Physical Activity per Week



Which parents exercised least per week?

- Fathers in Air Force (mean = 3.19 days) and Navy (mean = 3.40 days)
- Fathers in senior enlisted families (mean = 3.74 days) and officer families (mean = 3.85 days)
- Mothers in senior enlisted families (mean = 2.35 days)
- Mothers in families whose children did not attend day care or preschool (mean = 2.28 days)

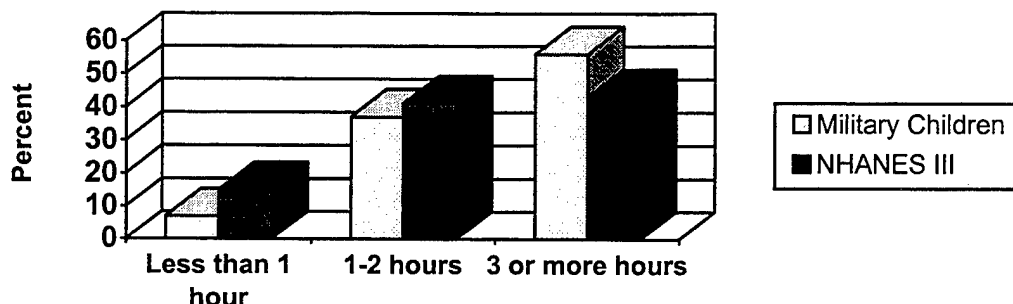
Refer to Appendix D. Tables 5 and 6

Children's Television Viewing

As Figure 6B-3 demonstrates, many (41%) of the children watched television three to four hours per day on both weekdays and weekends. In addition, 14% of the children watched television daily for five or more hours during the week and 15% watched five or more hours on weekends. Further, the 55% and 56% of military children who watched three or more hours of television on weekdays and weekends, respectively, are appreciably greater than the 43% reported in NHANES III (National Center for Health Statistics [NCHS], 1988-1991).

The majority (59%) of the families reported that their children snacked "sometimes" while watching television. However, 30% indicated their children "rarely" or "never" snacked while watching television, and very few (1%) "always" ate in front of the TV. Children of junior and senior enlisted personnel were more likely to snack while watching television than were children of officers (Appendix D, Table 11).

Figure 6B-3
Children's Television Viewing per Week



Which children most often watched television 3+ hours per day?

- Children of Army personnel
 - weekday (59%)
 - weekend (61%)
- Children of junior and senior enlisted personnel

<u>junior enlisted</u>	<u>senior enlisted</u>
• weekday (64%)	• weekday (57%)
• weekend (58%)	• weekend (59%)
- Differences by parental employment status

<u>one parent working</u>	<u>two parents working</u>
• weekday (58%)	• weekend (62%)
- Differences by Sure Start/Head Start

<u>enrolled</u>	<u>eligible not enrolled</u>
• weekend (63%)	• weekend (59%)
- Differences by attendance at day care/preschool

<u>did not attend</u>	<u>attended</u>
• weekday (66%)	• weekend (58%)

Refer to Appendix D, Tables 7 to 10

6C. Discussion

In order to initiate healthy lifetime habits, physical activity should be encouraged for all children. Queen & Lang (1993) describe a few of the benefits of exercise for children. These include:

- Development of basic communication skills
- Development of social interaction skills
- Improvement of self-esteem & confidence.

Physical activity is associated with reduced risk for a number of health problems in later life (Ross & Gilbert, 1985). It is well known that young children, if given the opportunity, will spontaneously engage in active play. Therefore, children should be provided with safe places to explore and develop large muscle skills. Since attitudes about physical activity are often patterned by events that happen to children early in life, a goal for preschool children should be to develop a positive outlook about exercise while setting the stage for routine participation in enjoyable physical activity over the course of a lifetime. The data from military families is encouraging in that so many children played actively for at least three hours per day.

One indicator of children's level of physical activity is the exercise habits of their parents (Sallis, Patterson, McKenzie & Nader, 1988). Positive parental exercise habits contribute to healthy exercise patterns for preschoolers. The majority of fathers reported exercising at least three times per week, yet only half of mothers reported exercising this often and one-quarter reported never exercising. The modeling behavior of mothers in military families does not bode well for future physical activity and fitness in their children (especially their daughters). It would be advantageous for support personnel to continue to advocate for more fitness programs designed especially for mothers and their children.

There continues to be some ambiguity about the relationship between television viewing habits and weight status. Some researchers report that excessive television viewing may place children at risk for obesity due to reductions in physical activity and metabolic rates (Schlicker, Borra & Regan, 1994; Klesges, Shelton & Klesges, 1993). However, other researchers have not found the same relationship between increased amounts of television viewing and obesity (Robinson et al., 1993). Even though the research is controversial regarding the relationship between hours of television viewing, adiposity, and physical activity, there is consensus that the amount of time spent watching television can be considered one marker of a sedentary lifestyle which may lead to other negative outcomes in the future (Robinson et al.; Klesges, Shelton, &

Klesges). More research is needed to assess the long-term effects of extensive television watching on weight status.

Television viewing has been connected with several other negative outcomes. Television commercials pressure preschoolers concerning food selection (Barness, 1993) and contribute to poor food choices. Additionally, concerns about the relationship between television viewing and aggressive behavior, poor academic performance and at-risk behaviors have increased (Murray, 1995). However, there are benefits that can be gained from television watching such as effectively teaching children specific skills, preparing children for formal schooling, and enhancing attentiveness and perceptual skills. Ultimately television can be used as a creative and innovative medium to promote good health, fitness and nutrition (Dwyer, 1995). Families are challenged to cope with the effects of television advertising in order to prevent negative influences on their children's eating habits. Ultimately, parents must balance the possible negative effects of extensive television viewing with the potential benefits. Military families, particularly those of enlisted personnel, need encouragement to engage in other forms of entertainment or recreation. Additional creative Family Support Center programming is an avenue worth exploring.

6D. Summary

Strengths

- Most children engaged in active play either indoors or outside at least three hours per day on both weekdays and weekends.
- The majority of fathers reported exercising at least three times per week.

Areas of Concern

- Only 50% of mothers reported exercising three or more times per week, and 24% reported never exercising.
- Preschool children in military families watched more television than a comparable sample of civilian children.

Implications

- Parents should engage in physical activity with their children and encourage a positive attitude about exercise. Verbal prompts and parental modeling are two of the most effective actions that parents can take to increase their children's activity level.
- The services can assist parents by expanding recreation and entertainment programs for preschool children and their families.
- Parents should watch television with their children, discuss what they are viewing, and teach them to be discerning viewers.
- Family Service Center/Community Support Center personnel can educate parents, especially enlisted personnel, working parents, and those whose children are eligible for, or enrolled in Sure Start/Head Start about the pros and cons of television viewing.

7. Weight Status

Childhood obesity constitutes a major health problem. Over the past 20 years, the prevalence of obesity has steadily increased from 7.6% to 14% for children aged 6 to 11 and from 5.7% to 12% for adolescents (CDC, 1997). The prevalence of obesity for children in military families has also been increasing (Tiwarý & Holguin, 1992). This is quite problematic since the estimated chance of adult obesity is three times greater for obese children than for those with normal body mass (McArdle, Katch, & Katch, 1994). Obesity in childhood has also been related to a number of health problems later in life including increased mortality during middle age (Wardlaw & Insel, 1996).

Educators and health professionals are no longer focusing on diet alone when developing nutrition programs, but rather are considering factors such as the current weight and fitness status of children. With the shifting focus to these factors, there is a need to clarify what behaviors may be contributing to increased weight in children. Although genetics and nutrient intake are still considered primary components in the equation, factors such as level of physical activity and television viewing patterns have gained support as potential causes of obesity in children (Schlicker et al., 1994). Programs designed to prevent obesity during childhood may well have an impact on various risk factors for chronic disease among adults. To be most effective, these programs should be initiated during early childhood while health habits are developing (Webber, Srinivasan, Wattigney & Berenson, 1991).

7A. Construction of Instrument

Questions regarding height and weight consisted of items adapted from the Third National Health and Nutrition Examination (NHANES III) Survey (NCHS, 1988-1991). The respondent-reported height and weight of each child was converted to single percentile rankings in three categories: height by age, weight by age, and weight by height. These percentile rankings were developed by the National Center for Health Statistics (NCHS) for growth charts (Hamill et al., 1979). The charts indicate how the height and weight of a child compare to the national norms. Height of the child is used as both an indicator of past nutritional status and genetic growth potential. Weight reflects energy intake in the present or near past, and thus is an indicator of short-term nutritional deficiencies (Caliendo, 1979). Weight by height is generally used to identify children who may be obese or undernourished (Queen & Lang, 1993).

Parents' weight status was measured by converting their self-reported heights and weights to a commonly accepted scale of weight and height, the body mass index (BMI). The individual's BMI was then placed into one of four NCHS defined categories: underweight, acceptable weight, overweight, and severe overweight (Groff, Gropper, & Hunt, 1995). Numerical cut-off points for the BMI are provided in Appendix E. Additionally, the responding parent was also asked to indicate whether he or she had changed his or her eating habits in the last six months in order to gain or lose weight.

7B. Results

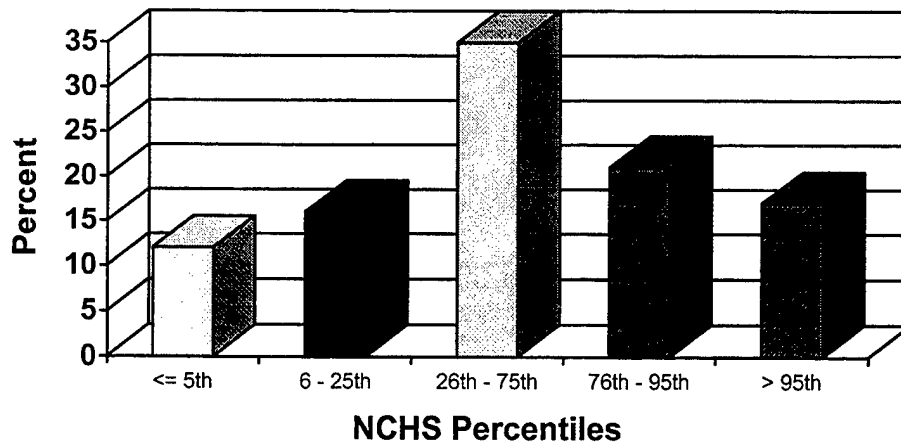
Children's Weight Status

As with any self-reported information, the accuracy of the weight and height data from the sample was dependent on respondent information and memory. These data, therefore, should be viewed with caution.

Thirty-four percent of children were in the middle quartiles (26th - 75th percentiles) for height by age and 46% for weight by age. However, 18% and 7% of children fell below the 5th percentile for height and weight, respectively. On the other end of the spectrum, 17% and 9% of the children scored above the 95th percentile for height and weight, respectively.

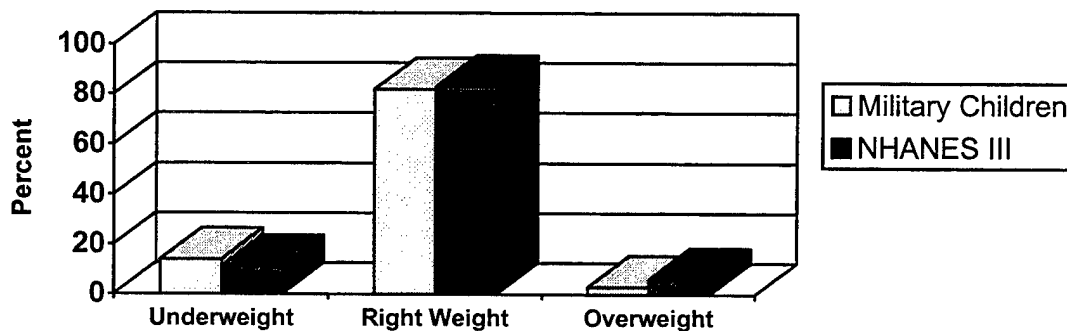
Figure 7B-1 illustrates that only 35% of the children were in the middle quartiles for weight by height. However, the data reflect a larger than expected number of children at either end of the continuum. Note that 12% of the children fell below the 5th percentile and 17% were above the 95th percentile. More children in Navy families (19%) were above the 95th percentile than were children in Marine Corps (14%) or Air Force (15%) families (Appendix E, Table 1).

**Figure 7B-1
Children's Weight by Height**



The majority (82%) of parents felt that their children were about the right weight. However, 14% felt that their children were underweight. Military parents were slightly more likely to perceive their children as underweight than a comparison group of parents of civilian children (Figure 7B-2).

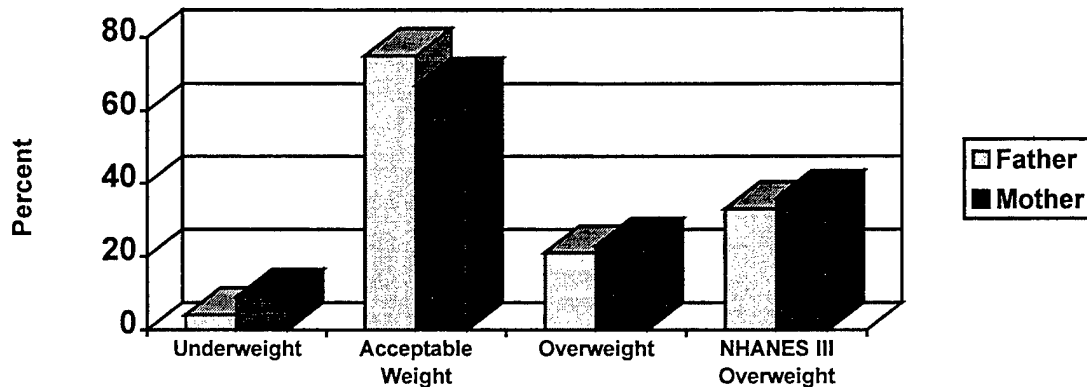
**Figure 7B-2
Parents' Perception of Children's Weight**



Parents' Weight Status

Most (75%) of fathers and 67% of mothers were classified as being at an acceptable weight according to BMI standards. However, 21% of fathers and 23% of mothers were classified as overweight, while 4% of fathers and 9% of mothers were underweight (Figure 7B-3). This is less than was found in NHANES III where 33% of men and 36% of women in the civilian population were overweight (CDC, 1997).

Figure 7B-3
Father's and Mother's Weight (BMI)



In response to a question asked only of the responding parent, 43% of males and 57% of females indicated that in the last six months they had dieted to lose weight, while only 5% of males and 4% of females reported that they had changed their diet to increase their weight. Analyses by subgroups found significant differences in BMI across services and rank for both mothers and fathers.

Which parents were the most overweight?

- Fathers in Navy (26%) and Air Force (22%) families
- Fathers in senior enlisted families (22%)

- Mothers in Navy (26%) and Army (25%) families
- Mothers in junior (27%) and senior (25%) enlisted families

Refer to Appendix E, Tables 2 to 5

7C. Discussion

Appropriate weight status has long been recognized as an integral component of good health. By age five, a relationship exists between fitness, fatness, and blood pressure (Gutin et al., 1990). Although excess weight during adolescence is a stronger predictor of adult obesity than obesity earlier in childhood (Schlicker et al., 1994), longitudinal studies suggest that 40% of children who are overweight at age seven remain overweight as adults (Kolata, 1986). Since the prevalence rate of childhood and adult obesity has been found to be increasing steadily over the last twenty years (CDC, 1997), it is encouraging

that so few military parents were obese. Ideally, excess adiposity should be prevented or reduced during the childhood years so that future weight patterns do not continue the recent trends.

Although the self-reported results for the anthropometric measures in this study must be interpreted with caution, a larger than expected number of children were at both the upper and lower ends of the height by age, weight by age and weight by height growth charts. The children who were classified above the 95th percentile for weight by height, especially those who also watch television excessively and exercise infrequently, are at risk for future weight and health problems. Conversely, the preschoolers who fell below the 5th percentile on the weight by height chart may have experienced short-term malnutrition and have the potential for long-term stunting (Krug-Wispe, 1993). Weight by height measurements do not indicate the actual level of body fat for children; therefore, skinfold thickness or some other measure of body fat should be taken as part of a well-child check-up (Wolfe, Campbell, Frongillo, Haas, & Melnik, 1994). Follow-up by appropriate health care personnel as part of a preventative medical plan would help to clarify the weight status of these children and ameliorate any possible short- and long-term health consequences.

As indicated by the weight for height data, parental concern about weight did not proportionately reflect the reported anthropometrics of the children. Very few parents thought their children were either underweight or overweight. However, a number of those parents who indicated that their children were underweight also reported information which placed them above the 25% percentile for height by weight. This incongruence between parental perception of weight status and the self-reported height and weight information is problematic. Further attention is warranted to better understand why these inconsistencies exist.

Overweight children should be encouraged to spend less free time in sedentary activities such as watching television or playing video games. They should be provided with safe places, both indoors and outdoors, to engage in spontaneous play. Underweight children need additional calories from nutritious meals and snacks so that they can actualize their genetic growth potential. Problem arise when children do not get appropriate messages and positive modeling from their parents. Families need help to better understand the importance of balancing energy intake with energy output. Installation programs that provide activities for young children can be an important catalyst for behavioral change for these children and their families.

7D. Summary

Strengths

- Fewer parents were overweight than a comparable civilian sample.

Areas of Concern

- Over 17% of children were classified above the 95th percentile (a marker for obesity) for weight by height and 12% were below the 5th percentile (a marker for malnutrition) on the NCHS growth charts.
- Although fewer military parents were overweight compared to civilians, it is still a concern that over 20% of military parents were overweight.
- Parental perceptions regarding their children's weight status did not accurately reflect the reported anthropometrics of the children.

Implications

- The higher-than-expected prevalence of underweight and overweight children should be further investigated by medical personnel at a well-child check-up.
- Educational programs should emphasize the positive message "*be more active*" rather than the negative message "*eat less food.*"
- Programming which supports a healthy lifestyle for parents should continue.

8. Environmental Tobacco Smoke Exposure

The U.S. Surgeon General reported that environmental tobacco smoke was a health hazard for those who are exposed to it (DHHS, 1986). In 1992, the Environmental Protection Agency updated and extended these findings concluding that for children environmental tobacco smoke (ETS) exposure is causally associated with:

- Increased risk of lower respiratory tract infections (LRIs) such as bronchitis and pneumonia
- Increased prevalence of fluid in the middle ear, symptoms of upper respiratory tract irritation, and a small but significant reduction in lung function
- Additional episodes and increased severity of symptoms in children with asthma
- Risk for new cases of asthma in children who have not previously displayed symptoms (EPA, 1992).

The evidence of respiratory harm to children exposed to passive smoking is increasing (Pirkle et al., 1996). Research has found that children in nonsmoking households were likely to be healthier than children living with smokers (DiFranza & Lew, 1996). Children of parents who smoke 10 cigarettes or more per day are at nearly double the risk of hospitalization for a respiratory illness and have two and a half times greater chance of developing asthma (Carey & Fraser, 1992). Additionally, children exposed to secondhand smoke at home were 70% more likely to have wheezing with colds, 60% more likely to visit the emergency room for wheezing, and 40% more likely to have persistent wheezing compared to children in homes without secondhand smoke (Cunningham, O'Connor, Dockery & Speizer, 1996). Therefore, the evidence suggests that ETS is problematic and potentially dangerous for young children and further research is needed to clarify these risks so that interventions can be developed.

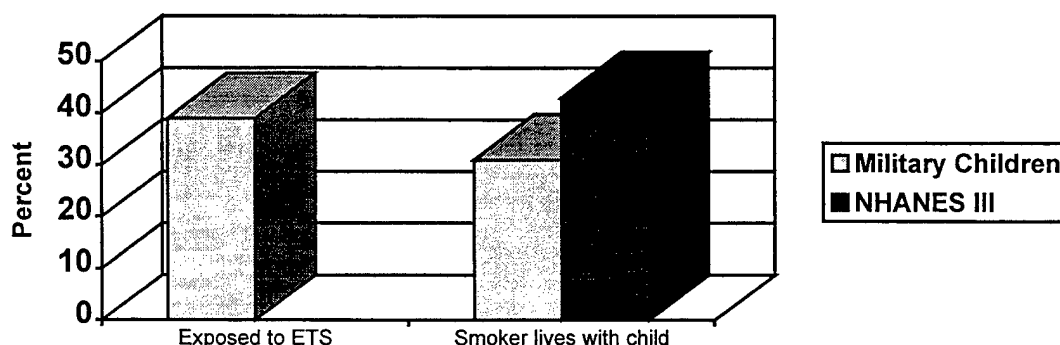
8A. Construction of Instrument

Questions on environmental tobacco smoke (ETS) exposure were adapted from NHANES III (NCHS, 1988-1991). To assess potential exposure to ETS, respondents were asked where, if at all, people smoked around their children. They were also asked whether anyone in their children's present household was a smoker.

8B. Results

Parents reported that 39% of their children were exposed to ETS, while slightly less (31%) resided with one or more smokers (Figure 8B-1). NHANES III data indicated that 43% of families surveyed had an adult smoker in the household (NCHS, 1988-1991).

Figure 8B-1
Environmental Tobacco Smoke Exposure



For those exposed, the places with the highest percentages of contact with ETS were in the home (40%), at a friend's or relative's (40%), and in the car (28%). Many of these children were exposed to tobacco smoke in more than one location. However, over 30% of the exposed children may have had only peripheral contact with ETS since the parents indicated exposure "only in some other place," for example, possibly at the mall or in a restaurant. Analyses by subgroups indicated greatest exposure for children in Army and Navy families, children of enlisted personnel, and those enrolled in or eligible for Sure Start/Head Start.

Which children were most often exposed to ETS?

- Children in Army (43%) & Navy (39%) families
- Children of junior (50%) & senior (42%) enlisted personnel
- Children who were enrolled in (52%) and eligible for (44%) Sure Start/Head Start

Which children most often lived with a smoker?

- Children in Army (33%) & Navy (34%) families
- Children of junior (40%) & senior (35%) enlisted personnel
- Children who were enrolled in (35%) and eligible for (38%) Sure Start/Head Start

Refer to Appendix F, Tables 1 to 4

8C. Discussion

Although proponents of the tobacco industry have attacked the recommendations from the EPA, scientific evidence establishing the risks of passive smoking, especially for children, is mounting steadily. Corbo et al. (1996) reported that children's breathing was measurably affected by seemingly innocuous exposure to smoke at friends' homes, in restaurants, and on public transportation. Since greater exposure will occur in a household where smoking regularly takes place, it is likely that these children will be most at risk for the negative health effects of ETS.

Respondents indicated that over a third of children were exposed to environmental tobacco smoke. Many of these children were exposed in multiple settings and lived in a household where one or more adults smoked. Although the results from this study indicated fewer children than in a civilian sample lived in a household where a parent smoked, an increased risk for the negative health effects associated with secondary smoke exists for those children who resided with a smoker. Parents in families of junior and senior enlisted personnel, and those with children enrolled in or eligible for Sure Start/Head Start constitute a target for education concerning the risks of ETS and smoking cessation programs.

8D. Summary

Strengths

- Military families reported that a smoker resided with their children less often than did a comparable civilian sample.

Areas of Concern

- Almost 40% of children were exposed to environmental tobacco smoke (ETS) and many were exposed in more than one location.
- Families of enlisted personnel and those whose children were enrolled in or eligible for Sure Start/Head Start most often exposed their children to ETS.

Implications

- Programs are needed which inform parents of the potential risks of ETS and assist individuals in smoking cessation.

9. Health of the Children

The World Health Organization (WHO) defines health as a state of complete physical, mental, and social well-being and not merely the absence of disease and infirmity (WHO, 1947). Thus, health is multifaceted, and includes physical, mental, and social dimensions. Within the present study, a number of specific areas have been examined under the rubric of health. These include the medical history of the family, children's health status, vitamin supplementation practices, children's immunization schedules, and parental concerns about their children's health. The additional components of the WHO definition are discussed in other areas within this report.

Genetic predisposition is a known risk factor in a number of the leading causes of death in the United States. Both physicians and health surveys routinely collect information regarding family history of heart disease, heart attack, cancer, high blood pressure, diabetes, as well as a number of other potential health problems (Fisher, 1989).

In the United States today, the national infant vaccination rate is at an all-time high, and incidence of a number of childhood communicable diseases (i.e., measles-mumps-rubella [MMR], oral poliovirus [OPV]) are at historic lows (CDC, 1996). While the absolute number of preschool children properly immunized in the United States is quite high, 1993 vaccination coverage rates among children aged 19-35 months ranged from 16.3% for three or more doses of hepatitis B (Hep B) to 88.2% for three or more doses of diphtheria and tetanus toxoids and pertussis (DTP) (CDC, 1994). Therefore, an upswing in childhood diseases is possible due to poor compliance with recommended vaccination schedules among parents of preschoolers.

In response to the concern over immunization levels for all children, the Clinton Administration has issued the Childhood Immunization Initiative (CII) which aims to increase childhood immunization rates to at least 90% for the most critical doses in the vaccination series (CDC, 1994). The principal goal of the Childhood Immunization Initiative (CII) was to increase, by 1996, vaccination levels for two-year-old children to at least:

- 90% for the most critical doses in the series (i.e., one dose of MMR and at least three doses DTP, H. influenza b vaccine [Hib], and OPV)
- 70% for at least three doses of Hep B.

The increasing focus on wellness and health promotion highlights the need to identify factors associated with the use of preventive medical and dental care (Ettner, 1996). Early pediatric medical and dental visits provide parents with

information regarding their children's development and the prevention of problems (Nowak & Casamassimo, 1995). Because the health of its members is a crucial factor in the overall well-being of the family (Cunningham, 1990), the study of health care issues is useful to those concerned with military families.

9A. Construction of Instrument

Questions regarding children's health were adapted from NHANES III (NCHS, 1988-1991) and the 1992 DoD Surveys of Officers and Enlisted Personnel and their Spouses (Westat, 1994). These items asked respondents to describe: the health problems of children's living and deceased blood relatives, concerns and perceptions about their children's health, the immunization history of their children, any diagnosis of disabilities or handicaps which their children had, and the health services that their children utilized. Additional questions that assessed utilization and parental perception of military medical/dental services for their children were added after Phase I. The Childhood Immunization Initiative (CII) recommendations for each of the childhood illnesses were used for all analyses concerning vaccinations (CDC, 1994).

9B. Results

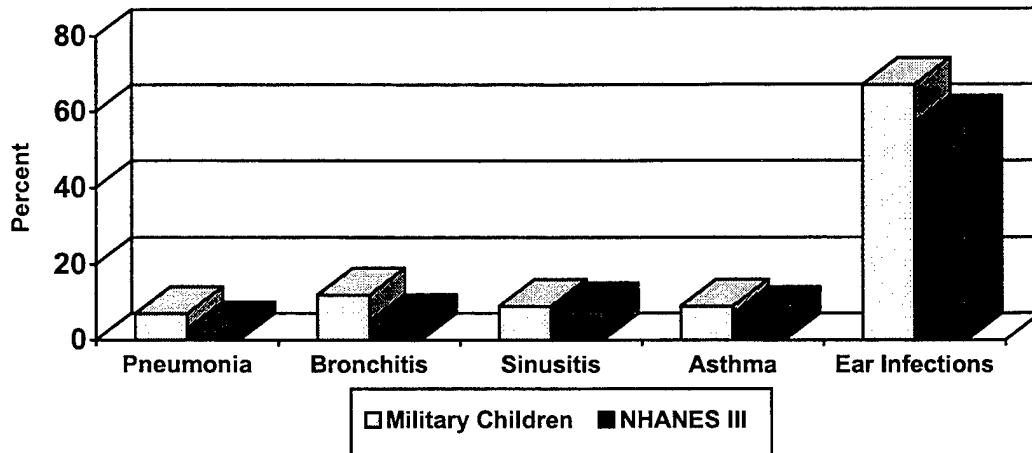
Family History

Respondents were asked a series of questions about the health problems of their children's living and deceased blood relatives. Several health problems were reported; these included high blood pressure (62%), diabetes (49%), cancer (47%), high cholesterol (36%), heart disease (30%), obesity (27%), heart attack (25%), and food allergies (16%).

Children's Health

When asked to rate their children's health, 99% of the respondents indicated it was "good," "very good," or "excellent." NHANES III found that 93% of civilian families rated their children's health in a similar manner (NCHS, 1988-1991). In conjunction with parents' perceptions, very few childhood illnesses were reported (Figure 9B-1).

**Figure 9B-1
Childhood Illnesses**



Military parents reported that 67% of their children had been diagnosed with ear infections (a common ailment of childhood). In comparison, NHANES III reported 57% of their sample with a history of ear infections. Additionally, 12% of military children were diagnosed with bronchitis, 9% had a history of asthma, and 9% have had sinusitis.

Which children were most often diagnosed with illnesses?

Asthma

- Navy (10%)
- Children of junior enlisted (11%)
- Children enrolled in (13%) & eligible for (11%) Sure Start/Head Start

Ear Infections

- Air Force (70%)
- Children of officers (71%)
- Children not eligible for Sure Start/Head Start (69%)
- Children who attended day care/preschool (68%)

Sinusitis

- Navy (12%)
- Children not eligible for Sure Start/Head Start (10%)

Bronchitis/Bronchiolitis

- Navy (15%)

Refer to Appendix G, Tables 1 to 4

Vitamins

In response to a series of questions regarding vitamin supplements, 54% reported that their children took some form of a multi-vitamin or vitamin/mineral supplement. This is higher than the 43% of two- to six-year-old civilian children reported in the 1986 National Health Interview Survey (Moss, Levy, Kim, & Park, 1989).

Which children were most often taking a vitamin supplement?

- Children of officers (62%)
- Children not eligible for Sure Start/Head Start (56%)

Refer to Appendix G, Table 5

Children's Immunizations

Respondents were asked a series of questions about their children's vaccination history. Although almost three-quarters of the families reported that they had their children's vaccination records, 26% did not have the documentation in their possession.

Which families did not have their children's immunizations records?

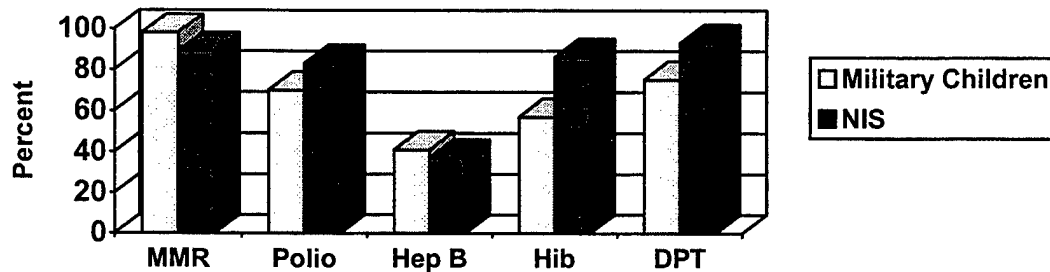
- Families of junior enlisted personnel (29%)
- Families with both parents working (28%)
- Families whose children were enrolled in (28%) & eligible for (28%) Sure Start/Head Start

Refer to Appendix G, Table 6

All families were asked to refer to their children's vaccination records, or if records were unavailable, to recall the number of inoculations that their children had received by age two. Respondents indicated that almost all of the children (98%) met CII recommendations for MMR. A larger percentage fell short of the CII minimum guidelines for Polio (30%), Hib (43%), and DTP (25%), and even more were below the guidelines for Hep B (59%). Figure 9B-2 illustrates that fewer military children met the CII guidelines for Polio, Hib, and DTP than did civilian children during the 1994 National Immunization Survey (CDC, 1995). Since over 20% of military families indicated that they did not know or were unsure of how many doses their children had received for each of

these vaccinations, and 18% of families did not answer the question at all, the estimates of the number of military children who met the recommendations need to be interpreted with caution.

Figure 9B-2
Met CII Goal for Immunizations



Further analyses by subgroups found that families with both parents working and those with children enrolled in or eligible for Sure Start/ Head Start were most at risk for not meeting vaccination guidelines.

Which children were not meeting the CII guidelines for vaccinations?

Polio

- Children with both parents working (34%)
- Children who were enrolled in (33%) & eligible for (34%) Sure Start/Head Start

DTP

- Children of junior enlisted (30%) and senior enlisted (26%) personnel
- Children with both parents working (29%)
- Children who were enrolled in (28%) & eligible for (30%) Sure Start/Head Start

Hib

- Air Force (49%)
- Children with both parents working (46%)
- Children who were enrolled in (47%) & eligible for (49%) Sure Start/Head Start
- Children who attended day care/preschool (44%)

Hep B

- Children who lived OCONUS (64%)

Refer to Appendix G, Tables 7 to 13

Programming for Children with Disabilities/Handicaps

Responding families reported that 6% of their children had been diagnosed with disabilities or handicaps. Less than 1% of children were reported as having been diagnosed with Autism or Pervasive Developmental Disorder (PDD) and less than 2% were diagnosed as having an Attention Deficit Hyperactivity Disorder (ADHD or ADD). In regard to medication, 14% of children with autism or PDD and 37% of those with ADD or ADHD were taking Ritalin. In addition, over 23% of children with one of these conditions were taking some other medication.

Of the children reported as having disabilities or handicaps, 57% were not enrolled in the Exceptional Family Member Program (EFMP) and 41% did not have an active Individualized Education Program (IEP). Additionally, 48% of children with an active IEP were not enrolled in the EFMP. Yet, 55% of children who were enrolled in EFMP were not diagnosed by a medical, educational, or mental health professional as having a disability or handicap.

The majority (52%) of families reported being either "satisfied" or "highly satisfied" with the services provided through the EFMP program, however 20% of families indicated dissatisfaction with these services.

Which families least often utilized the EFMP for their children?

- Marine Corps families (2%)
- Families who lived off base or post (4%)
- Families whose child did not attend day care/preschool (4%)

Refer to Appendix G, Table 14

Medical Care

The majority (81%) of families utilized a military clinic or hospital for their children's health care, though 11% used a private medical practice. Only 38% of families reported that their children saw one particular doctor or health professional. Families who sought care at the military clinic or hospital were less likely to see one particular doctor or health care professional for their children's health needs, while those who had a private practitioner were more likely to have a primary physician.

Families were asked a series of questions regarding their satisfaction with medical care during the times their children had used military medical

services. Overall, there were more families (44%) who were happy with the medical services available for their children through the military than there were families who were unhappy (35%).

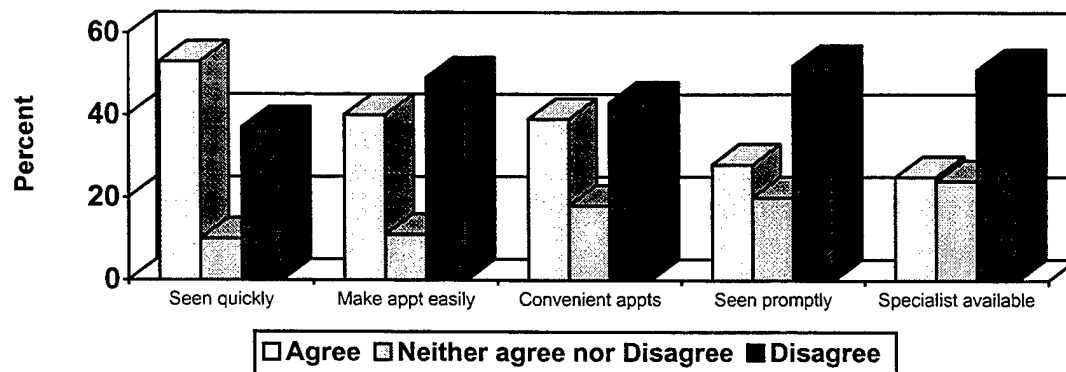
Which families expressed the most unhappiness with military medical services?

- Army families (39%)
- Families with both parents working (37%)
- Families who lived off base or post (37%)
- Families who lived stateside (37%)

Refer to Appendix G, Tables 15 to 16

Figure 9B-3 illustrates families' perceptions regarding medical care at military facilities. Although the majority (53%) of families agreed that their children were seen quickly at a military hospital or clinic when necessary, 37% disagreed with this statement. Many (49%) families did not believe it was easy to make medical appointments at military medical facilities or that appointments could be made at convenient times (43%). Yet, 40% had an opposite experience and believed that it was easy to make appointments for their children, and 39% thought that appointments were at convenient times. Many families (52%) disagreed that they were seen promptly when arriving for an appointment, and a similar percentage (51%) disagreed that it was easy to arrange an appointment for their children to see a medical specialist.

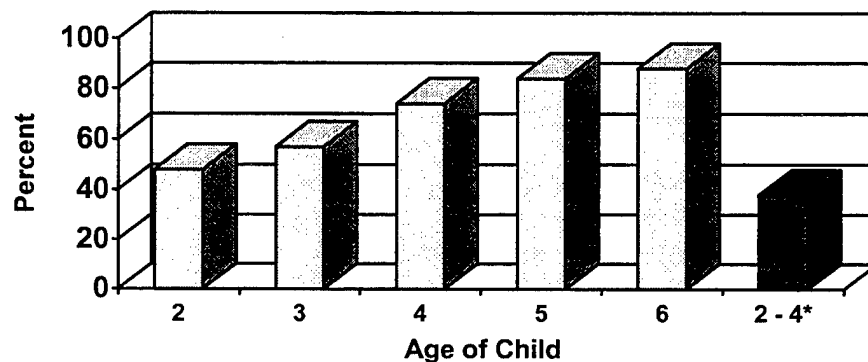
Figure 9B-3
Family's Perceptions of Military Medical Services



Dental Care

Approximately, 72% of families reported that their children received dental care and 21% of this care was on base or post. Figure 9B-4 demonstrates that more military children aged two to four visited a dentist than a comparable civilian group (DHHS, 1992).

Figure 9B-4
Dental Care & Comparison to Civilian Children (Aged 2-4)*



Of those families whose children had received dental care on base or post, 69% were satisfied with the care, while only 15% expressed dissatisfaction with these services. Children of junior enlisted personnel were least often receiving dental care and their parents were most often dissatisfied with care on base or post.

Which children did not receive dental care?

- Children of junior enlisted personnel (44%)
- Children who were eligible but not enrolled in Sure Start/Head Start (30%)
- Children who did not attend day care/preschool (36%)

Which families were most dissatisfied with military dental care?

- Children of junior enlisted personnel (16%)

Refer to Appendix G, Tables 17 and 18

9C. Discussion

Military families were uniformly positive about their children's health and were more positive than a comparable sample of civilian parents. However, military parents reported a higher incidence of diagnoses for a number of childhood medical conditions than did families in NHANES III (NCHS, 1988-1991). The slight difference may be a result of the greater access to health care for military families than is found in the civilian population, especially among lower income groups. Compared with the national data, vitamin or mineral supplement use is higher among military children, especially in families of officers. However, there is no reason to believe that these children have any greater requirement for these preparations or that this increased usage is harmful.

Many children in military families did not meet the CII goal for DTP, Polio, Hib and Hep B. However, these numbers are comparable to findings from the National Immunization Survey which examined national immunization rates for children born between May 1991 and May 1993 (CDC, 1995). While military families with preschool children reported immunization coverage for MMR above the national norms, they were below the recent findings for Polio, Hib and DTP. It is encouraging that more children in military families were immunized against Hepatitis B which may signify a quicker response from the military in implementing recent recommendations regarding this vaccination. However, data on immunizations should be interpreted with caution for two reasons. First, 18% of the responding families did not answer this item and over 20% did not know how many doses their children had received. The high percentage of non-response raises questions regarding the immunization levels of these children. Second, parents tend to underestimate the number of doses received for multiple-dose vaccines and to overestimate coverage for single-dose vaccines (Goldstein, Kviz & Daum, 1993; Valadez, & Weld, 1992).

The principle reason for the lower level of immunizations in the civilian population is a failure on the part of many parents to follow through with their children's immunization programs (Payne & Hahn, 1995). In the military, an additional factor may be the lack of continuity of health care as families move from one installation to another. It is important that a concerted effort be made to continue to reach out to all military members and their families. Efforts should be made through multiple channels to encourage parents to follow the recommended vaccination schedule in order to obtain the protection that these inoculations provide. Well-baby and well-child visits to any health professional should include immediate scheduling for missed vaccinations.

Base relocation services, as well as any orientation meetings for new base personnel, need to emphasize the importance of following through on vaccinations for young children.

Few families reported having children with diagnosed disabilities or handicaps, or having children enrolled in the EFMP. However, a substantial number of children who were diagnosed with disabilities did not have an active IEP and were not enrolled in the EFMP. Reasons for the inconsistencies reported in eligibility and participation rates should be identified so that these children have access to the full range of services available. In addition, since only slightly more than half of families enrolled in the EFMP were satisfied with this program, further study of program goals and objectives should be undertaken. The small number of children diagnosed with ADHD/ADD or autism/PDD does not support comparisons between the incidence of these conditions and the use of various therapeutic modalities for their treatment. Further research may help to clarify the usefulness of various treatments for these conditions.

The use of medical care during childhood sets the stage for health care patterns later in life (Riley et al., 1993). Since the vast majority of respondents reported utilizing the military clinic for their children's health care, two areas of concern for the military are parental dissatisfaction with medical care and possible lack of continuity in care. Several factors may be contributing to the unhappiness of responding families, including the busy schedules many families routinely face or the distance they have to travel to get medical care for their children. Since medical care is a crucial component of the health and well-being of preschool children, the military should continue to work with families to ensure that these children are getting the quality care they need. The issue of continuity of care needs further exploration in order to ensure that children get quality health care even when they do not have the benefit of establishing a long-term relationship with one particular medical or health care provider.

The Healthy People 2000 identifies the need for preschool children to visit a dental professional (DHHS, 1990) and the American Dental Association supports this by stating "that all children should visit a dentist by age 1" (American Dental Association, 1992). It is encouraging that almost three-quarters of preschool children in military families received dental care. Professional dental services are a primary source of oral hygiene education and preventative dental regimes. Regular care can help sustain oral health throughout a lifetime, especially if begun at an early age (DHHS, 1992). Outreach and education efforts should continue, especially with families of junior enlisted personnel to ensure that all preschool children are getting dental care at an early age.

There is no reason to believe that military families are any different in terms of risks and vulnerabilities to health problems or disease than the general American population. Therefore, the health promotion strategies identified in the Healthy People 2000 report (DHHS, 1990) are certainly germane and vital to service members and their families. Incorporating the strategies of this report into military programming will positively influence the health and well-being of service members, their families and their preschool children.

9D. Summary

Strengths

- Families rated their children's health positively and reported few occurrences of illness.
- Most families who utilized the EFMP were satisfied with the services provided.
- The majority of families used military medical facilities for their children's health care.
- It is encouraging that so many military children visited a dentist.

Areas of Concern

- Although preschool children in military families were above national vaccination levels for MMR and Hep B; fewer children were vaccinated against DTP, Polio and Hib.
- Except for MMR, children in military families were not meeting the Childhood Immunization Initiative (CII) guidelines.
- There were inconsistencies in reported eligibility and participation rates for EFMPs and IEPs.
- More than one third of families reported an overall dissatisfaction with military medical care.

Implications

- The military, in conjunction with national efforts for increased immunization levels, should continue vaccination outreach programs in order to meet CII guidelines.
- Medical personnel, installation relocation services, as well as family support staff should stress the importance of following through on vaccinations.
- The reasons for the inconsistencies in utilization rates of EFMPs and IEPs should be identified so that eligible children have access to the full range of services available.
- Further research should examine the reasons for the reported dissatisfaction with military medical care and the implications for children when they do not have continuity of care with one particular medical provider.
- More outreach and education is needed so that all children receive the dental care that they need.

10. Use of Support Services

Military families are subject to multiple stressors related to military life. Life stresses unbuffered by social supports have a negative influence on mental and physical well-being, including eating patterns (Brown, 1986; Haslam, Stevens, Haslam, 1989; Lin & Ensel, 1989). Intervening social supports can be found in either formal networks such as community agencies or informal ties such as extended family and friends (Ell, 1984; Lin & Ensel). A lack of social ties or social isolation is an important factor in psychological well-being, illness, and even death (Ell). In response to an enhanced awareness of the need for social support resources to assist families, the Armed Forces have developed Family Centers and service programs (Albano, 1994). These programs and services directly affect family well-being (Crawford, 1989) and are an important element of this study. Furthermore, community supports such as Federal food and nutrition programs can also provide an important resource for many military families.

In the United States the percentage of children receiving care and education outside of the home has increased to the point that most children now receive some type of nonparental care and education prior to starting first grade (West, Wright & Hawkins, 1995). Evidence is accumulating which shows that positive developmental outcomes are associated with attendance at high quality preschool programs (West & Hausken, 1994). However, not all programs are equal. Choices are available between market care or care by relatives, with personal as well as economic preferences influencing this decision (Kuhlthau & Mason, 1996). The number of hours children spend in child care is strongly related to the employment status of their mothers (West & Hausken, 1993). The greater proportion of mothers in the workplace has generated a growing demand for child care services (Lakhani & Ardison, 1991). The military provides many supportive services in the area of child care, and thus it is important to examine the similarities and possible differences between military preschoolers and civilian children in the area of out-of-home care.

10A. Construction of Instrument

Items related to use of support services were modified from questions in the 1992 DoD Surveys of Officers and Enlisted Personnel and their Spouses (Westat, 1994) and NHANES III (NCHS, 1988-1991). These items assessed the utilization of formal support services on the installation (e.g., the Family Support Center), and those available in the community (e.g., Special Supplemental Program for Women, Infants and Children [WIC], Food Stamps, etc.). Changes were made to these items following Phase I to allow families to indicate whether specific services were available at their current duty stations. Respondents were also asked to report whether their children attended a day care center, family care home, preschool or kindergarten and, if so, how many hours per week.

10B. Results

Support Services

Over 60% of families reported using at least one family program or support service during the last year. These programs were offered either through the Family Support Center or through governmental/community sponsored support and nutrition programs. The programs most frequently used were the Family Support Center/Army Community Service Center (35%), School Lunch Program (25%), WIC (23%), and Day Care Nutrition Program (16%). Analyses identified several subgroups who were most often utilizing the family support services or federal food programs.

Which families most often used military support services?

Family Support Centers/Community Support Centers

- Air Force families (38%)
- Families of junior enlisted personnel (40%)
- Families whose children were enrolled in Sure Start/Head Start (47%)
- Families with only one parent working (37%)
- Families who lived OCONUS (48%)
- Families who lived on base or post (42%)

Refer to Appendix H, Tables 1 to 3

Which families most often used community support services?

WIC

- Army (28%) & Marine Corps (28%) families
- Families of junior (45%) and senior (23%) enlisted personnel
- Families with only one parent working (28%)
- Families who lived stateside (26%)
- Families who lived on base or post (27%)
- Families whose children were enrolled in (45%) & eligible for (26%) Sure Start/Head Start
- Families whose children did not attend day care/preschool (33%)

Food Stamps

- Army (4%) & Marine Corps (4%) families
- Families of junior enlisted personnel (8%)
- Families with only one parent working (3%)
- Families who lived on base or post (4%)
- Families whose children were enrolled in (9%) & eligible for (4%) Sure Start/Head Start
- Families whose children did not attend day care/preschool (5%)

Refer to Appendix H, Tables 4 to 9

Day Care, Preschool and Kindergarten

The majority (68%) of families reported that their children regularly attended one or more programs such as a child development center/day care center (25%), family child care home (11%), preschool (28%), or kindergarten (14%).

Which children most often received out of home care or attended educational programs?

Child Development Center/Day Care

- Army children (28%)
- Children in families with both parents working (39%)

Family Child Care Home

- Children of senior enlisted personnel (12%)
- Children in families with both parents working (18%)

Preschool

- Children of officers (47%)
- Children who lived off base or post (31%)

Refer to Appendix H, Tables 10 to 12

The majority of children who attended day care or a family child care home did so on base or post. Children who went to preschool or kindergarten were more likely to do so off base or post. Although 42% of the children attended programs for less than 20 hours per week, 29% were enrolled for 40 or more hours.

Which children most often attended for more than 40 hours per week?

- Children of junior (34%) and senior (32%) enlisted personnel
- Children in families with both parents working (46%)
- Children who lived off base or post (30%)
- Children who were not eligible for Sure Start/Head Start (30%) and those eligible but not enrolled (28%)

Refer to Appendix H, Tables 13 and 14

Children in military families were similar to civilian children with respect to the proportion receiving out-of-home care. The 1995 National Household Education Survey (NHES) found that approximately 60% of children under the age of six, who were not yet enrolled in kindergarten, received some type of child care from persons other than their parents (West et al., 1995). The present study found that 53% of the children in military families, who were not yet enrolled in kindergarten, were receiving care outside the home.

The 1990 National Child Care Survey (NCCS) found that nearly 80% of three- to four-year-old children living with an employed mother were in some type of child care and 55% spent at least 35 hours per week in that care arrangement (Hofferth, Brayfield, Deich, Holcolm, 1990). The present study found similar results, 78% of three-year-olds and 82% of four-year-olds living in families where both parents were employed or there was a single parent, were enrolled in child care. Additionally, 72% of three-year-olds and 67% of four-year-olds spent at least 30 hours in child care.

The U.S. Bureau of Census recently reported that 51% of four-year-olds and 27% of three-year-olds were enrolled in educational programs, such as preschool, prior to kindergarten (U.S. Census, 1991). In the present study 39% of four-year-olds and 21% of three-year-olds in military families were enrolled in preschool/nursery school programs. Additionally, 21% of four-year-olds and 23% of three-year-olds were enrolled in child development center/day care programs.

10C. Discussion

Respondents reported relatively low usage rates for the various supportive services and programs available to them. Researchers have previously noted the need for more emphasis on outreach to encourage utilization (Griffith, Stewart & Cato, 1988; Segal & Harris, 1993). The Family Support Center/Community Support Center (FSC/CSC) was the most utilized service or program and should be viewed as a potential vehicle for disseminating information and providing services to military families.

The findings for the use of community support services were consistent with previous research in that families of junior enlisted personnel and those living on base or post were utilizing these programs most often (Maze, 1997). Federal nutrition programs, such as WIC, are part of the community's response to the nutritional needs of its children. Support services both within the military and the community may prevent potentially negative outcomes for these families. Further attention is needed to ensure that military members, especially families of junior enlisted personnel and those with a child eligible for Sure Start/Head Start, are able to access all supportive programs currently available to civilian families.

Military children are similar to civilian preschoolers in terms of how many are receiving child care outside the home and how many hours they are in that care. Many military children are enrolled in child care centers on base or post. These centers have attained an excellent reputation for high quality child care, and, therefore, provide an excellent opportunity for learning and social development (Jowers, 1997b).

10D. Summary

Strengths

- It is encouraging that over 60% of families were using some form of support services either on the installation or in the community.
- Over 50% of the children were enrolled in educational programs such as preschool or child development centers.

Areas of Concern

- Only 35% of families utilized the Family Support Centers/Community Support Centers.
- Families who were eligible but not enrolled for Sure Start/Head Start were not using the FSC/CSC as often as those enrolled.

Implications

- Emphasis on outreach to encourage greater utilization of installation and community support services should be pursued.
- Since junior enlisted personnel and families enrolled in Sure Start/Head Start most often used the FSC/CSC, these are excellent places to disseminate health and nutrition information.
- Families with a child eligible but not enrolled in Sure Start/Head Start comprise a potentially vulnerable group and should be targeted for outreach.
- Extending nutrition programs, such as WIC, to families living OCONUS would benefit potentially eligible families who currently do not have access to these programs.
- Continued support for, and expansion of, Child Development Centers would allow more military children an excellent opportunity for learning and social development.

11. Family Experiences

Military families must adapt to the normal developmental tasks of parenthood, while also facing the challenges of moving or deployment (Olson et al., 1989). Family researchers have been interested in why some families cope well with expected and unexpected stressors, and other families do not. Due to the implications for retention and readiness, a great deal of military family research has focused on identifying the stressors associated with military life and the resources families use to cope with them (Bell, Schumm, Elig, Palmer-Johnson, & Tisak, 1993). The "T-Double ABCX" model of family stress focuses on adaptive resources, the family's sense of coherence and their perception of the presenting situation (McCubbin & McCubbin, 1987; Bowen, 1990). Strong families emphasize relationships among their members and facilitate them through effective communication patterns. The more satisfied family members are with their family life, the greater their own life satisfaction and well-being (Olson et al.). The parent-child relationship is of particular importance to family life. If children have an emotionally supportive relationship with their parents or with a caring adult, they are more likely to develop high levels of self-esteem and advanced cognitive ability, healthy psychological functioning, and advanced moral reasoning. They are also more likely to incorporate parental attitudes, values, and role expectations (Rollins & Thomas, 1979; Maccoby, 1980; Amato, 1990). Although there is extensive research about the coping strategies of military families, greater understanding is needed about how well service members with young children are developing family bonds within the context of a military environment.

11A. Construction of Instrument

Three items were adapted from the Sense of Family Coherence Scale (Antonovsky & Sourani, 1988). These three items were also used on the Adaptation to Army Life Survey (Bowen, Orthner & Levin, 1994). They were answered on a seven-point Likert scale. These items examined the family's sense of manageability (i.e., the feeling of confidence that the resources are available to meet demands or problems). Scores were totaled to form a scale score with an alpha reliability of 0.75. The higher the score, the greater the amount of family cohesion. In addition, two questions were developed by MFI which examined satisfaction with and quality of family relationships.

11B. Results

The majority of respondents were satisfied with their roles as parents (86%) and with the relationships they had with their children (88%). Overall, the respondents were positive about their family cohesion. The majority (56%) felt very strongly that things which depend on the cooperation of family members will always get done; 67% felt very strongly that their family would solve the whole problem in situations where they faced a tough problem; and 61% felt very sure that things would get better when their family was going through a rough period. The scale had a mean of 16.88 and a standard deviation of 3.23 (scores could range from 3 to 21). Families of enlisted personnel and those whose children were enrolled in or eligible for Sure Start/Head Start expressed the most family dissatisfaction.

Which parents expressed the least family satisfaction?

More dissatisfied with roles as a parent

- Junior enlisted personnel (18%)

More dissatisfied with relationships with child

- Junior enlisted personnel (18%)
- Parents whose children were enrolled in (15%) or eligible for (14%) Sure Start/Head Start

Which families reported the lowest levels of family cohesion?

- Junior (mean = 16.14) and senior enlisted personnel (mean = 16.86)
- Parents whose child was enrolled in (mean = 16.13) and those eligible for (mean = 16.65) Sure Start/Head Start

Refer to Appendix I, Tables 1 to 3

11C. Discussion

Overall, it is encouraging that the majority of military families were satisfied with their roles as parents and their relationships with their children. Respondents also expressed a strong sense of family cohesion. The preschool years are a formative time in the development of relationships, and the primary role models for children are their parents. The reported family satisfaction and cohesion bodes well for readiness, retention and future family adaptation to the military as a way of life. Programs which provide parenting education to those most at risk should focus on further developing strong parent-child bonds and problem-solving skills.

11D. Summary

Strengths

- Most families were satisfied with their roles as parents, with their relationships with their children, and expressed a sense of family cohesion.

Areas of Concern

- Families of junior enlisted personnel and those who were eligible/ enrolled in Sure Start/Head Start reported the least amount of family satisfaction or a sense of family cohesion.

Implications

- It is likely that families of junior enlisted personnel and those who were enrolled in or eligible for Sure Start/Head Start would benefit from parenting education efforts.

12. Military Experiences

The demands of military life include many dimensions which have the potential to impact upon the health and well-being of children in military families. Military spouses consider military-induced family separation to be their major dissatisfaction with military life (Bell, Stevens & Segal, 1996; Black, 1993; DMDC, 1985; Lund, 1978). The perception by families that the military is concerned with their well-being plays a critical role in their level of adaptation and satisfaction with military life (Bowen & Neenan, 1989). Family adaptation can be viewed as a combination of the family's ability to adapt to work demands and their ability to maintain satisfaction by meeting their own internal needs (Schumm, Bell, & Tran, 1993). The extent of this adaptation has an impact on retention (Etheridge, 1989) and readiness (Orthner & Bowen, 1990). Additionally, Bowen (1989) found that military members who were most satisfied with the level of personal freedom reported more overall satisfaction with military life than those who perceived military life as restrictive.

Military families often face unexpected stressors (i.e., delay in returning from scheduled deployment, change in training schedule, and threat of conflict). Reported symptoms of stress related to duty and separation include increased frequency of physical illness, anxiety, grief, anger, loneliness, sleep disturbance, increased use of drugs and alcohol, low frustration level when dealing with children, and social isolation (Bell et al., 1996; Black, 1993; Kelley, 1994; McCubbin, Dahl & Hunter, 1976). Although a link between nutrition and military family stress has not been established, further investigation of the dietary patterns and the health of preschool children is certainly warranted to ascertain if military stressors impact on these areas as well.

12A. Construction of Instrument

Several questions were used to measure military experiences (e.g., separation, relocation, and duty stress). Family adjustment to the military was measured by one question. A series of items asked the respondents to indicate whether they thought that being part of a military family affected their ability to do several individual and family tasks. Another series assessed the frequency of job demands and the perception of stress that these demands may have caused for the family. Several of these items were adapted from the Adaptation to Army Life Survey (Bowen et al., 1994).

12B. Results

Adjustment to Military Family Life

A slight majority (51%) of families indicated that they had adjusted to the demands of being a military family either to a "very great extent" or a "great extent," while only 18% reported that they had adjusted either "not at all" or to a "slight extent" to the perceived demands of military family life.

Which families reported the least extent of adjustment to the demands of being a military family?

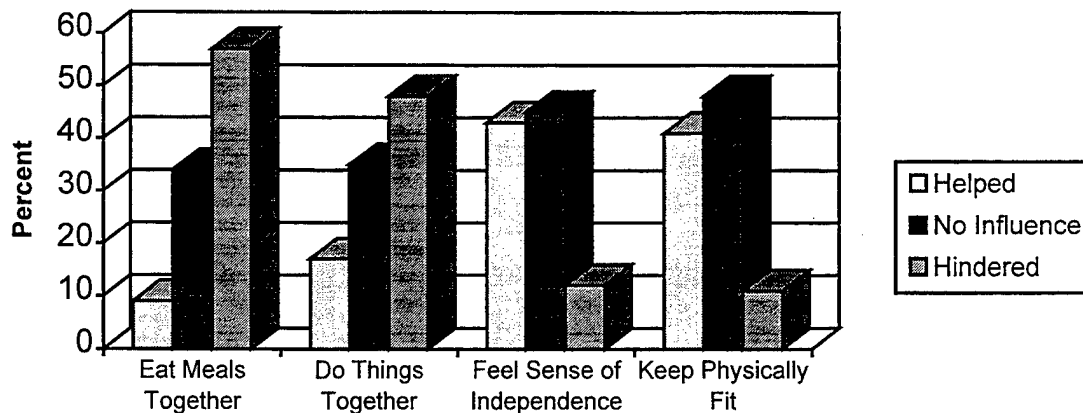
- Families of junior (23%) and senior enlisted (19%) personnel
- Families whose child was eligible but not enrolled in Sure Start/Head Start (20%)

Refer to Appendix J, Table 1

Influence of Military on Family Functioning

Many respondents reported that being part of a military family had no influence on their family's functioning (Figure 12B-1). However, 57% reported that being part of a military family hindered their family's ability to eat meals together, and 48% reported that it hindered their ability to do things together as a family. On a positive note, 43% of families felt that being part of a military family helped their family members to feel a sense of independence or self-sufficiency, and 41% felt that it helped their family members to keep physically fit.

Figure 12B-1
Influence of Military Life on Family Functioning



Navy and Army families as well as those who lived off base or post felt the most hindrance in regards to their ability to eat meals together and do things together as a family. Families in the Marine Corps, families of officers, families who lived OCONUS and those whose children attended day care, preschool or kindergarten felt that being part of military family most often helped their family feel a sense of independence and keep physically fit.

Which parents reported that being part of a military family hindered their ability to eat meals together?

- Navy (63%) and Army (61%) families
- Families who lived off base or post (60%)

Which parents reported that being part of a military family hindered their ability to do things together as a family?

- Navy (56%) and Army (50%) families
- Families who lived off base/post (50%)

Refer to Appendix J, Tables 2 to 4

Which parents reported that being part of a military family helped their ability to feel a sense of independence?

- Navy (47%) and Marine Corps (51%) families
- Families of officers (56%)
- Families who lived OCONUS (47%)
- Families whose children were not eligible for Sure Start/Head Start (46%)
- Families whose children attended day care (45%)

Which parents reported that being part of a military family helped their ability to keep physically fit?

- Army (47%) and Marine Corps (53%) families
- Families of officers (46%)
- Families in which both parents worked (43%)
- Families who lived OCONUS (43%)
- Families whose children were enrolled in (47%) or eligible for (43%) Sure Start/Head Start
- Families whose children attended day care (42%)

Refer to Appendix J, Tables 5 to 9

Military Job Demands & Stressful Life Events

With respect to military-related job demands during the last month, and the subsequent impact on families, 62% of all respondents reported that they had experienced unpredictable work schedules and 63% of these respondents indicated that this had interfered with their ability to meet family responsibilities. Additionally, 68% of all responding service members had been kept at work beyond normal hours and 59% of these indicated that this extra work had interfered with family responsibilities. While only 30% of all respondents had been called back to work, 63% of those who worked this extra shift felt that it interfered with their family responsibilities. Finally, 50% of all families experienced a family member being away from home for temporary duty assignment (TDY), field exercises, or training, and 61% of these families felt that this separation had interfered with the military member's ability to meet family responsibilities.

In the last year, many families experienced stressful life events. For example, 88% reported a separation from family members, 69% moved due to permanent change of station (PCS), 92% had job situations that were stressful, 87%

reported stress related to personal safety, 92% experienced a family situation that was stressful, 90% reported stress due to health, and 76% of military members were deployed. The majority (54%) reported a moderate to large amount of stress related to separation from family members. While 48% felt that their family had experienced a moderate to large amount of stress related to a PCS move, 36% perceived no stress. Many (54%) of the families felt that job situations caused a moderate to large amount of stress. The majority of families felt that factors such as family situations (33%), personal safety (67%) and health (56%) were not stressful. Deployment was also perceived as not stressful by 46% of families, although 38% did indicate a moderate to large amount of stress.

12C. Discussion

Families with children of all ages struggle to balance the expectations of employment with the demands of family life; this is especially true in families with young children. The military has been called a "greedy institution" in that it makes heavy demands upon the military members for commitment, loyalty, time, and energy (Segal, 1986). It is encouraging that many families felt that they had adjusted to the demands of being a military family. However, the military should be concerned about the 18% who felt that they had not adjusted. It is well-known that when family members are satisfied with the military as a way of life, readiness and retention for the service member are enhanced (Segal & Harris, 1993).

The military places many types of occupational stressors on its members and their families. The results of this study are similar to the findings of the Army Family Research Program (AFRP) in that many respondents reported job demands such as unpredictable work schedules and being kept at work beyond normal hours (Griffiths & Helms, 1992). Families must be prepared for these "unexpected" job demands and have plans in place to ensure that normal family functioning continues even when there are unpredictable events.

It is interesting to note that so many of the families indicated that the military had no influence on their families' functioning. In some ways, this may support the recent hypothesis that the military has become just a job for its members rather than the total institution it once may have been (Moskos & Wood, 1988). It is encouraging that many families felt that being part of a military family helped their family feel a sense of independence and keep physically fit. However, the fact that so many families reported that the military hindered their family's ability to eat meals together should be further explored since there is evidence that children who eat meals together with their family have better nutrition (Wolfe & Campbell, 1993; Nicklas, Bao, Webber &

Berenson, 1993; Redd & deCastro, 1992). Families of junior enlisted personnel reported the most hindrance, and thus are most likely to be dissatisfied with the military as a way of life.

Numerous studies have examined the amount of stress families experienced due to military life. The challenge for military families with preschoolers is to ensure that the health and nutritional well-being of their children is maintained during stressful periods. Children are likely to suffer negative effects as a result of stressors such as separation, PCS moves, and deployment (Pittman & Bowen, 1994; Fowler, Simpson & Schoendorf, 1993). Support programs that target those families most at risk, especially families of junior enlisted personnel may provide the needed buffer against potential negative outcomes for their children.

12D. Summary

Strengths

- The majority of families reported they had adjusted to the demands of being a military family.
- Many families felt that being part of a military family helped their family members to feel a sense of independence and to keep physically fit.

Areas of Concern

- Attention is needed to the 18% of families who felt that they had not adjusted to being a military family.
- Being part of a military family was reported as hindering many families' ability to eat meals together and to do things as a family.

Implications

- Continued supportive programming to military members and their families will enhance their adaptation to the military as a way of life.
- Further research to clarify the effects of military stressors on the health and nutrition of children in military families, especially those families with young children.

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14. Appendixes

A. Questionnaire

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The Health and Nutrition of . . .

Children in Military Families

Marking Instructions

➤ Please use a #2 pencil.	➤ Do not fold, tear, or mutilate this form.
➤ Fill in only one circle for each question, unless the question says to "Mark all that apply."	➤ If you want to change your answer, erase it fully and mark the correct answer.
➤ Please be sure to blacken in circles completely.	➤ CORRECT MARK ●
➤ Make no stray marks on this form.	➤ INCORRECT MARKS ○ ⊗ ⊙ ⊖

This survey should be completed by the person(s) who best knows the daily routine of your 3 to 5 year old child. This person can be either the active duty military person, the spouse/significant other or someone else. If you have more than one 3 to 5 year old, please answer about your 3 to 5 year old who had the most recent birthday. If you have no child in this age range because of a recent sixth birthday, please answer for your six year old child. There are no "right" or "wrong" answers on this survey. We are interested in your opinions and experience.



**Military Family Institute
OF MARYWOOD COLLEGE**
a Department of Defense - sponsored research center
with a focus on family issues

Report Control Symbol DD-P&R (OT) 1980

PLEASE DO NOT WRITE IN THIS AREA

About This Questionnaire

The purpose of this study is to examine the health and nutrition impacting on preschoolers in military families. The survey asks questions about diet, health and eating habits, physical exercise and weight, tobacco use in the family, and various questions about military family life.

Why me?

You have been selected at random to be part of a sample of military parents of preschool children.

Why should I bother?

Statistics from surveys provide valuable information to policy makers and program planners. No decisions about you alone will be made based on this survey, but survey results may influence policy, resulting in changes that affect you and other service members who are parents. You may not see the changes directly since policy statements do not list sources of information considered in adopting such policies. Your response is important. If you choose not to participate, your opinion and views cannot be considered in policy reviews and changes.

Will my survey be kept private?

Yes. Under no circumstances will any information about identifiable individuals be released. Your responses will be combined with information from many other parents to report the views and experiences of groups of participants.

PRIVACY NOTICE

In accordance with the Privacy Act of 1974 (Public Law 93-579), this notice informs you of the purpose of the survey and how the findings will be used. Please read it carefully.

AUTHORITY

10 United States Code, Section 136 and 2358.
Public Law 99-145, Section 304

PRINCIPAL PURPOSE

Information collected in this survey will be used to sample attitudes and perceptions of military members about the health and nutrition of their preschool children. This information will assist in the formulation of policies which may be needed to improve the health and nutrition of children in military families. Reports will be provided to the Secretary of Defense, the Office of Family Policy, Support and Services, each Military Service, and the Joint Chiefs of Staff. Findings may be used in reports and testimony provided to Congress. Some findings may be published by the Office of Family Policy, Support and Services (OFP, S&S), or professional journals, or reported in manuscripts presented at professional conferences, symposia, and scientific meetings. In no case will the data be reported or used to identify individual(s).

ROUTINE USES

None.

DISCLOSURE

Providing information on this survey is voluntary. There is no penalty if you choose not to respond. However, maximum participation is encouraged so that the data will be complete and representative. Your survey instrument is anonymous. No one, including the research team, will know how you responded. Only group statistics will be reported. If you have any questions concerning your rights as a participant in this study, you may call or write: Dr. William J. Mohan, Chair, Institutional Review Board, Marywood College, Scranton, PA 18509 Phone: 717-348-6213.

Thank you for participating in this survey!

page  two

To begin, we'd like to know some things about the household in which you and your preschool child reside.

1. My child is:

- ☐ Female ☐ Male

2. How old was your child on his/her last birthday?

- ☐ 2 years old ☐ 5 years old
☐ 3 years old ☐ 6 years old
☐ 4 years old



3. Are you:

- ☐ Male ☐ Female

4. What is your relationship to the child?

- ☐ Biological parent ☐ Foster parent
☐ Adoptive parent ☐ Other (Please specify.)
☐ Step-parent

5. Does your child currently live with you?

- ☐ Yes ☐ No

6. How many of your child's brothers and sisters (biological, step and/or foster) currently live with you and your child?

- ☐ None (If none, skip to question #8.)
☐ One ☐ Three ☐ Five ☐ Seven
☐ Two ☐ Four ☐ Six ☐ Eight or more

7. Of those children that your child now lives with, is your child the:

- ☐ Oldest child ☐ 4th child ☐ 7th child
☐ 2nd child ☐ 5th child ☐ 8th child or younger
☐ 3rd child ☐ 6th child

8. Including yourself, how many adults (18 years or older) is your child living with now?

- ☐ One ☐ Three ☐ Five or more
☐ Two ☐ Four

9. Does your child regularly attend any programs such as day care, preschool, kindergarten?

- ☐ Yes (Mark all that apply.) ☐ No (Please go on to question #10.)

On base/post Off base/post

- Child Development Center/Day Care ☐ ☐
 Family Child Care Home ☐ ☐
 Preschool/Nursery School ☐ ☐
 Kindergarten ☐ ☐

Continued

If Yes, how many total hours per WEEK?

- ☐ Less than 10 hours
☐ 10 hours to less than 20 hours
☐ 20 hours to less than 30 hours
☐ 30 hours to less than 40 hours
☐ 40 hours to less than 50 hours
☐ 50 hours or more

The next questions ask about your family's food shopping and meal preparation habits.

10. Who regularly does the food shopping for your family?

- ☐ I do ☐ Child's grandparent
☐ My spouse/significant other ☐ Housekeeper or babysitter
☐ Both parents ☐ Other (Please specify.)
☐ Child's brother or sister

11. Where does your family shop for food? (Mark all that apply.)

- ☐ Supermarket, grocery store, warehouse
☐ Convenience store, gas station, drug store
☐ Specialty store, ethnic food store
☐ Commissary, Base or Post Exchange
☐ Produce stand, farmer's market
☐ Don't know/unsure

12. Who regularly does the cooking for your family?

- ☐ I do ☐ Child's grandparent
☐ My spouse/significant other ☐ Housekeeper or babysitter
☐ Both parents ☐ Other (Please specify.)
☐ Child's brother or sister

13. Which of the following food groups does your child consume in very small quantities or not at all because your child does not like the foods or gets sick from the foods? (Mark all that apply.)

	Child does not like	Child gets sick
Bread/cereal/pasta group	<input type="radio"/>	<input type="radio"/>
Vegetable group	<input type="radio"/>	<input type="radio"/>
Fruit group	<input type="radio"/>	<input type="radio"/>
Milk group	<input type="radio"/>	<input type="radio"/>
Milk	<input type="radio"/>	<input type="radio"/>
Cheese	<input type="radio"/>	<input type="radio"/>
Yogurt	<input type="radio"/>	<input type="radio"/>
Meat group	<input type="radio"/>	<input type="radio"/>
Beef	<input type="radio"/>	<input type="radio"/>
Poultry	<input type="radio"/>	<input type="radio"/>
Fish	<input type="radio"/>	<input type="radio"/>
Beans	<input type="radio"/>	<input type="radio"/>
Nuts	<input type="radio"/>	<input type="radio"/>

14 As a result of the current duty station of your family, have you changed what your family eats due to cost of food?

☐ Yes ☐ No (If no, please go on to question #15)

Please tell us whether your family eats more or less of the following foods due to cost.

	Eat more	Eat less
Fresh vegetables	<input type="radio"/>	<input type="radio"/>
Fresh fruit	<input type="radio"/>	<input type="radio"/>
Milk	<input type="radio"/>	<input type="radio"/>
Cheese	<input type="radio"/>	<input type="radio"/>
Bread/grains/rice/pasta	<input type="radio"/>	<input type="radio"/>
Meat	<input type="radio"/>	<input type="radio"/>
Fish	<input type="radio"/>	<input type="radio"/>
Poultry	<input type="radio"/>	<input type="radio"/>

13. As a result of the current duty station of your family, have you changed what your family eats due to the availability of food?

☐ Yes ☐ No (If no, please go on to question #16)

Please tell us whether your family eats more or less of the following foods due to availability.


	Eat more	Eat less
Fresh vegetables	<input type="radio"/>	<input type="radio"/>
Fresh fruit	<input type="radio"/>	<input type="radio"/>
Milk	<input type="radio"/>	<input type="radio"/>
Cheese	<input type="radio"/>	<input type="radio"/>
Bread/grains/rice/pasta	<input type="radio"/>	<input type="radio"/>
Meat	<input type="radio"/>	<input type="radio"/>
Fish	<input type="radio"/>	<input type="radio"/>
Poultry	<input type="radio"/>	<input type="radio"/>

The following statements
have to do with YOUR
CHILD'S food habits during
the PAST MONTH.

16. When serving chicken to your child in the past month, how often did you . . .

serve it baked or broiled?

remove the skin?

 When serving hamburger meat to your child in the past month, how often did you buy an extra lean cut?

18 In the past month, how often did you serve your child . . .

hot dogs (beef or pork—not low-fat)?

fish or chicken for dinner?

NOT APPLICABLE/DON'T KNOW

RARELY OR NEVER
SOMETIMES
OFTEN
USUALLY
ALWAYS

19 In the past month, how often
did you give your child . . .

2% milk instead of whole milk? ...
very low-fat (1%) or non-fat
(skim) milk?
reduced fat cheese or part skim
milk cheese?

NOT APPLICABLE/DON'T KNOW

RARELY OR NEVER
SOMETIMES
OFTEN
USUALLY
ALWAYS

20. In the past month, how often did you . . .

serve your child two or more vegetables
at dinner?

put butter on your child's bread, rolls,
or muffins?

21 In the past month, how often did you give your child . . .

cheese (not low-fat) as a snack?

potato, corn, or taco chips as a snack or
side dish?

a peanut butter sandwich for lunch?

22 In the past month, for breakfast, how often did you serve your child . . .

eggs?

hot or cold cereal?

breakfast meats (bacon or sausage)

sweet rolls, danish, or doughnuts?

23 Does most of your child's diet consist of foods not typically consumed by children in the United States?

☐ Yes ☐ No

24 Does your child take any of the following supplements?
(Mark all that apply.)

☐ Yes, a multivitamin
☐ Yes, a multivitamin with iron or other minerals
☐ Yes, single vitamins and/or single minerals
☐ Yes, antioxidants (Beta Carotene, Vitamin C, Vitamin E)
☐ No, my child does not take any of the above supplements

Now, we would like you to think about your child's eating patterns over the LAST WEEK.

25 Over the last week, how many breakfasts or morning meals did your child eat?

Of these how many were . . .

eaten with some but not all family members? . . .

eaten with the entire family, including the military member(s)? . . .

And how many were eaten at home?

26 Over the last week, how many lunches or noontime meals did your child eat?

Of these how many were . . .

eaten with some but not all family members?

eaten with the entire family, including the military member(s)?

And how many were eaten at home?

27 Over the last week, how many dinners or evening meals did your child eat?

Of these how many were . . .

eaten with some but not all family members?

eaten with the entire family, including the military member(s)?

And how many were eaten at home?

28 On a typical day last week, how many servings from the FRUIT GROUP did your child eat (a serving is 1 small piece of fruit, 1/4 cup chopped cooked or canned fruit, or 1/2 cup of fruit juice)?

None 1 2 3 4 More than 4

☐ ☐ ☐ ☐ ☐ ☐

On a typical day last week, how many servings from the VEGETABLE GROUP did your child eat (a serving is 2/3 cup of raw leafy vegetables, 1/4 cup of other vegetables-cooked or chopped raw, or 1/2 cup of vegetable juice)?

None 1 2 3 4 5 More than 5

☐ ☐ ☐ ☐ ☐ ☐

Continued

On a typical day last week, how many servings from the GRAIN GROUP did your child eat (a serving is 1 slice of bread, 1 muffin, 3/4 cup of ready to eat cereal, 1/2 cup cooked pasta, rice, or cooked cereal)?

None 1-2 3-4 5-6 7-8 9-10 11 or more

☐ ☐ ☐ ☐ ☐ ☐

On a typical day last week, how many servings from the MILK GROUP did your child have (a serving is 3/4 cup of milk or yogurt, 1 ounce of cheese)?

None 1 2 3 4 More than 4

☐ ☐ ☐ ☐ ☐

On a typical day last week, how many servings from the MEAT/BEANS GROUP did your child eat (a serving is 2 ounces of cooked lean meat, poultry, or fish, 1/4 cup cooked beans, 1 egg, 2 Tbsp. of peanut butter, or 1/4 cup of nuts)?

None 1 2 3 4 More than 4

☐ ☐ ☐ ☐ ☐

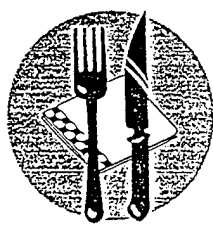
29 Now, thinking about ALL kinds of snacks (this includes cookies, crackers, fruits, vegetables, cheese, candy, chips, baked goods, and any other kind of food), how many TIMES did your child snack on a typical DAY last week?

☐ None ☐ Two ☐ Four

☐ One ☐ Three ☐ Five or more

30 When your family's military member is gone for a week or more (for example, deployed, sea or field duty, TDY, etc.), do your family's food habits change in any of the following ways? (Mark all that apply.)

- ☐ Prepare more packaged or quick foods
- ☐ Eat out more often at fast food restaurants
- ☐ Eat out more often at restaurants other than fast food
- ☐ Skip meals more often
- ☐ Eat more foods we like
- ☐ Eat at home more often
- ☐ Eat more leftovers
- ☐ Eat more snack foods
- ☐ Eat more fruits and vegetables
- ☐ Our eating habits do not change
- ☐ Other (Please specify.) _____



Please Continue

The following statements express concerns that parents have about their children's eating habits. Based on your experience with your child and your own feelings and ideas, tell us how much you agree or disagree with each of these statements. Please fill in **ONLY ONE** circle for each item.

	DISAGREE STRONGLY	DISAGREE	NEITHER AGREE NOR DISAGREE	AGREE	AGREE STRONGLY
31. My child should be free to eat whenever his/her body tells him/her it is hungry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. My child should always eat all of the food on his/her plate.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. My child should be strongly scolded for playing or fiddling with food.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. I have to be especially careful to make sure my child eats enough.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. When my child doesn't finish all of the rest of the dinner, he/she should not get dessert.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. A tasty snack is one of the best ways to reward my child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. I need to watch over my child's eating carefully and try to control it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. My child knows how hungry he/she is and how much he/she needs to eat at mealtime.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. When my child eats something that is healthy, that he/she doesn't like too much, my child is given something he/she likes in return.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. Offering a tasty dessert after a meal is an especially good way to get my child to eat foods that are good for him/her.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
41. I have to be sure that my child will not eat too much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. When I buy food, price is more important than nutrition.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. If your child complains "I'm not hungry" or does not feel like eating at mealtime, is it easy to keep him/her eating the meal once he/she takes a bite or two?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<input type="radio"/> Very hard	<input type="radio"/> Neither hard nor easy	<input type="radio"/> Fairly easy	<input type="radio"/> Very easy	

33. Generally speaking, **MORE THAN THREE TIMES A DAY** how often do you eat meals with your child?

	THREE TIMES A DAY	TWICE A DAY	ONCE A DAY	NOT AT ALL
Weekdays (Mon.-Fri.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weekends (Sat.-Sun.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The following questions ask about the health problems of your child's living and deceased blood relatives (this includes parents, grandparents, aunts, uncles, brothers, and sisters). Were any of them ever told by a doctor that they had . . .



34. **HEART DISEASE OR CORONARY ARTERY DISEASE** before the age of 55? (We're thinking of things like angina, bypass surgery, and other heart conditions.)

☐ Yes ☐ No ☐ Don't know

35. **A HEART ATTACK** before the age of 55?

☐ Yes ☐ No ☐ Don't know

36. Now, thinking again about your child's blood relatives, did any of them have any of the following health problems? (Mark all that apply.)

- | | |
|--|---|
| <input type="radio"/> Diabetes | <input type="radio"/> Cancer |
| <input type="radio"/> Obesity | <input type="radio"/> High blood pressure |
| <input type="radio"/> Eating disorders | <input type="radio"/> High cholesterol |
| <input type="radio"/> Osteoporosis | <input type="radio"/> Other (Please specify.) |
| <input type="radio"/> Food allergies | |

The following questions are about your child's health.

37. Do you have your child's vaccination records in your possession?

☐ Yes (If Yes, please refer to them in answering the next question.)

☐ No (If No, please answer the next question to the best of your ability.)

38. At age 2, how many doses of the following vaccinations had your child received?

	0	1	2	3	4	DON'T KNOW/UNSURE
Measles, Mumps, Rubella (MMR)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Polio (OPV)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hepatitis B (HB-1, HB-2, HB-3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
H. Influenza b (Hib)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Diphtheria, Pertussis, Tetanus (DPT)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

39. In general, how would you rate your child's health?

- ☐ Excellent ☐ Good ☐ Poor
☐ Very good ☐ Fair

40. Has a medical professional ever diagnosed your child as having any of the following conditions? (Mark all that apply.)

- ☐ Pneumonia ☐ Sinusitis
☐ Diabetes ☐ Ear infections
☐ Bronchitis/Bronchiolitis ☐ Asthma

41. Has a medical, educational or mental health professional ever diagnosed your child with any disability or handicap?

- ☐ Yes ☐ No (If No, please go on to question #42.)

If Yes, does your child have an active Individualized Educational Plan (IEP)?

- ☐ Yes ☐ No ☐ Don't know

42. Has a medical, educational or mental health professional ever diagnosed your child as having any of the following conditions? (Mark all that apply.)

Autism or Pervasive Developmental Disorder (PDD). ☐ YES ☐ NO
Attention Deficit Hyperactivity Disorder (ADHD) ☐ YES ☐ NO
or Attention Deficit Disorder (ADD) ☐ YES ☐ NO

If Yes, is your child taking any of the following medications for this condition? (Mark all that apply.)

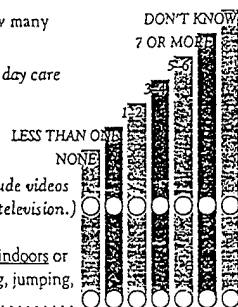
- ☐ Ritalin ☐ Other medication (Please specify.)
☐ Caffeine
☐ Large doses of vitamins

These next questions ask about your child's physical activity and size.

43. On a typical WEEKDAY, how many HOURS does your child... (Please include hours spent at day care or family child care home.)

watch television? (Please include videos as well as network and cable television.)

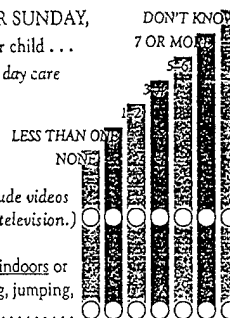
engage in active physical play indoors or outdoors (for example, running, jumping, climbing, etc.)?



44. On a typical SATURDAY OR SUNDAY, how many HOURS does your child... (Please include hours spent at day care or family child care home.)

watch television? (Please include videos as well as network and cable television.)

engage in active physical play indoors or outdoors (for example, running, jumping, climbing, etc.)?



45. Generally, how often does your child eat or snack while watching television?

- ☐ Rarely or never
☐ Sometimes
☐ Usually
☐ Always



46. Compared to other children the same age, would you say that the level of your child's physical activity is:

- ☐ Much less than other children
☐ Less than other children
☐ The same as other children
☐ More than other children
☐ Much more than other children

47. How recently was your child's height measured at home or elsewhere?

- ☐ Less than 1 month ago
☐ 1 month to less than 2 months ago
☐ 2 months to less than 6 months ago
☐ 6 months to less than 12 months ago
☐ 12 months ago or more

48. How tall is your child without shoes?

FEET	INCHES
1	0
2	1
3	2
4	3
5	4
6	5
7	6
8	7
9	8
10	9
11	10
12	11

For example, if your child's height is 3 ft. 6 inches, you would reply:

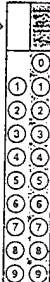
FEET	INCHES
3	6
4	7
5	8
6	9
7	10
8	11

Please Continue

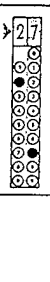
49 How recently was your child weighed at home or elsewhere?

- ☐ Less than 1 month ago
- ☐ 1 month to less than 2 months ago
- ☐ 2 months to less than 6 months ago
- ☐ 6 months to less than 12 months ago
- ☐ 12 months ago or more

50 How much (in lbs.) does your child weigh without shoes?

LBS. 

For example,
if your child weighs 27
lbs., you would reply:

LBS. 

51 Do you consider your child to be:

- ☐ Very overweight
- ☐ Somewhat overweight
- ☐ About the right weight
- ☐ Somewhat underweight
- ☐ Very underweight

Now, we'd like to ask a few questions about your health habits.

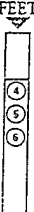
52 How many times per week do you exercise hard enough to make yourself sweat or breathe heavily for at least 15 to 20 minutes?


- ☐ None
- ☐ 1 time per week
- ☐ 2 times per week
- ☐ 3 times per week
- ☐ 4 times per week
- ☐ 5 times per week
- ☐ 6 times per week
- ☐ 7 times per week
- ☐ More than 7 times per week

53 In the last 6 months, have you changed your diet in order to ...

- increase your weight? ☐ YES ☐ NO
- decrease your weight? ☐ YES ☐ NO


54 How tall are you without shoes?

FEET 

INCHES 

55 How much (in lbs.) do you weigh without shoes?

If you are pregnant, please mark your pre-pregnancy weight.

LBS. 

56 Where, if at all, do people smoke around your child? (Mark all that apply.)

- ☐ Your house
- ☐ Your car
- ☐ Babysitter's house
- ☐ Close friend/relative's house
- ☐ Some other place
- ☐ No one smokes around my child

57 Is anyone in your child's current household a smoker?


- ☐ Yes
- ☐ No (If No, please go on to question #58.)


If Yes, who smokes? (Mark all that apply.)


- ☐ Myself
- ☐ My spouse/significant other
- ☐ Another adult
- ☐ A teenager


If Yes, which of the following does each person smoke? (Mark all that apply.)

CIGARETTES CIGARS PIPE

Myself 


My spouse/significant other 


Another adult 


A teenager 


If someone in the home smokes CIGARETTES, how many packs does he/she smoke per day?

LESS THAN 1/2 1/2 1 1 1/2 2 MORE THAN 2

Myself 

My spouse/significant other 

Another adult 

A teenager 

Now, we'd like to ask you about your experiences as a military family.

58 As of today, how long has your child been living at your present geographic location?

- ☐ Less than 3 months
- ☐ 3 months to less than 6 months
- ☐ 6 months to less than 1 year
- ☐ 1 year to less than 2 years
- ☐ 2 years to less than 3 years
- ☐ 3 years or more

59 How many times has your child been moved because of a permanent change of station (PCS)?

- ☐ None
- ☐ One
- ☐ Two
- ☐ Three
- ☐ Four
- ☐ Five or more

60 Is your child's current residence located in the Continental United States (CONUS) or outside of the Continental United States (OCONUS)?

- ☐ CONUS ☐ OCONUS—Central America
☐ OCONUS—Hawaii/Alaska ☐ OCONUS—Other
☐ OCONUS—Europe ☐ OCONUS—Asia
☐ OCONUS—Asia

61 Is your child currently living apart from either parent due to a military assignment?

- ☐ Yes ☐ No

62 In the past YEAR, for how many months was your child separated from one or both of his/her family's military members due to military assignment?

SEPARATED FROM YOUR SPOUSE/SIGNIFICANT OTHER (IF IN THE MILITARY)

SEPARATED FROM YOU (IF IN THE MILITARY)

- None
 Less than 1 month
 1 month to less than 3 months
 3 months to less than 6 months
 6 months to less than 9 months
 9 months to 12 months

63 In the past YEAR, was your child separated from either parent for 1 month or longer for a reason other than military assignment?

- ☐ Yes ☐ No

64 Are you and your child living on base/post or off base/post?

- ☐ On base or post ☐ Off base or post

65 In the last YEAR, how much stress has each of these factors caused your family?

- Separation of family members
 PCS move
 Job situation(s)
 Family situation
 Personal safety
 Health
 Deployment

66 In general, to what extent has your family adjusted to the demands of being a military family?

- ☐ Not at all ☐ Great extent
☐ Slight extent ☐ Very great extent
☐ Moderate extent



67 In the last MONTH, did any of the following job demands occur for the active duty military person(s)?

- Unpredictable work schedules YES NO
 If yes, did it interfere with his or her ability to meet family responsibilities?
 Kept at work beyond normal hours
 If yes, did it interfere with his or her ability to meet family responsibilities?
 Called back for an additional detail or shift after he or she had already left work
 If yes, did it interfere with his or her ability to meet family responsibilities?
 Was away from home for TDY, field exercises or training
 If yes, did it interfere with his or her ability to meet family responsibilities?

68 Please indicate whether you think being part of a military family generally affects the ability of your family members to . . .

- share responsibility for household tasks
 compromise when problems arise
 support one another during difficult times
 eat meals together as a family
 feel free to invite friends over to visit
 maintain a positive outlook on life
 do things together as a family
 feel a sense of independence or self-sufficiency
 keep physically fit
 eat a proper diet
 cope with job demands

Now, we would like to ask about health and support services.

69 Where do you MOST OFTEN take your child for health care?

- ☐ Private medical practice ☐ Host nation facility
☐ Military hospital ☐ Other (Please specify.)
☐ Military clinic (not a hospital)
☐ Civilian community health clinic ☐ There is not one particular place that I most often take my child for health care.
☐ Hospital emergency room

70 Is there one particular doctor or health professional that your child usually sees?

- ☐ Yes ☐ No



71 Now thinking about times when your child has used military medical services, please tell us how much you agree or disagree with the following statements. Please go on to question #72 if you do not receive medical care on base/post.

DISAGREE STRONGLY
DISAGR
NEITHER AGREE NOR DISAGREE
AGREE
AGREE STRONGLY
DOES NOT APPLY

My child can see a doctor at a military hospital or clinic quickly if necessary
It is easy to make medical appointments at a military hospital or clinic
Appointments at a military hospital or clinic can be made at convenient times for my family
When I arrive at my appointment, I am seen promptly by the physician
If my child needs to see a medical specialist it is easy to arrange an appointment
Overall, I am happy with the medical services available for my child through the military

72 For each family program or service listed below, please mark whether or not you have used it in the last YEAR.

	YES	NO	NOT AVAILABLE	DON'T KNOW
Family Support Center/Family Service Center/Army Community Service Center				
W.I.C. (Women, Infants and Children)				
E.F.N.E.P. (Expanded Food Nutrition Education Program)				
Food Stamps				
Head Start/Sure Start Program				
Nutrition Program at Day Care				
School Breakfast Program				
School Lunch Program				
Summer Milk Program				

73 Is your child enrolled in the "Exceptional Family Member Program (EFMP)"?

☐ Yes ☐ No ☐ Don't know/unsure

If Yes, how satisfied are you with the services provided to your child and family through the EFMP Program?

☐ Highly satisfied
☐ Satisfied
☐ Somewhat satisfied
☐ Dissatisfied
☐ Highly dissatisfied

74 Does your child receive dental care?

☐ Yes ☐ No (If No, please go on to question #75)

Is this dental care on base/post?

☐ Yes ☐ No (If No, please go on to question #75)

How satisfied are you with the dental care your child has received on base/post?

☐ Highly satisfied ☐ Dissatisfied
☐ Satisfied ☐ Highly dissatisfied
☐ Somewhat satisfied

The next three questions are about your family. Please choose the number from 1 to 7 that best describes your feelings.

75 When we have to get things done that depend on cooperation of all the members of the family, I feel . . .

1 2 3 4 5 6 7
THERE IS ALMOST NO CHANCE THAT THINGS WILL GET DONE. THINGS WILL ALWAYS GET DONE.

76 When my family faces a tough problem, I feel . . .

1 2 3 4 5 6 7
THERE IS NO HOPE OF SOLVING THE PROBLEM. WE WILL SOLVE THE WHOLE PROBLEM.

77 When my family is going through a rough period, we tend to . . .

1 2 3 4 5 6 7
I FEEL SURE THAT THINGS WILL GET BETTER. BECOME DISCOURAGED AND DOUBT IF THINGS WILL EVER GET BETTER.

Finally, we'd like to ask you for some background information.

78 What is your current marital status?

☐ Never married ☐ Separated ☐ Widowed
☐ Married ☐ Divorced

If you do not presently have a spouse or significant other, please skip the following questions and go on to question #92 on page 12. If you do have a spouse or a significant other, please continue with the questions below.

79 What is your spouse/significant other's relationship to your child?

☐ Parent ☐ Step-parent ☐ Foster parent ☐ Adoptive parent

80. How many years have you and your spouse/significant other been together?

- ☐ Less than 1 year ☐ 5 years to less than 7 years
☐ 1 year to less than 2 years ☐ 7 years
☐ 2 years to less than 3 years ☐ 7 years or more
☐ 3 years to less than 5 years

81. Are you and your spouse/significant other currently living apart?

- ☐ Yes ☐ No (If No, please go on to question #82.)
 If Yes, is this because of a military assignment?
☐ Yes ☐ No

82. Is your spouse/significant other an active duty member of the Armed Forces?

- ☐ Yes ☐ No (If No, please go on to question #83.)

If Yes, is he/she in the:

- ☐ Army ☐ Navy ☐ Marines Corps ☐ Air Force

What is your spouse's/significant other's pay grade?

- ☐ E-1 ☐ E-6 ☐ W-1 ☐ O-1 ☐ O-6
☐ E-2 ☐ E-7 ☐ W-2 ☐ O-2 ☐ O-7
☐ E-3 ☐ E-8 ☐ W-3 ☐ O-3 ☐ O-8
☐ E-4 ☐ E-9 ☐ W-4 ☐ O-4 ☐ O-9
☐ E-5 ☐ W-5 ☐ O-5 ☐ O-10

83. Is your spouse/significant other employed outside of the Armed Forces?

- ☐ Yes ☐ No (If No, please go on to question #84.)

If Yes, is it:

- ☐ Full time employment ☐ Part time employment

84. How much education has your spouse/significant other completed? Mark the ONE answer that describes the HIGHEST grade or academic degree that your spouse/significant other has COMPLETED. (Please do not include degrees from technical or trade schools.)

- ☐ Less than 12 years of school (no diploma)
☐ GED or other high school equivalency certificate
☐ High school diploma
☐ Less than 2 years of college credits, but no college degree
☐ 2-year college degree (AA/AS)
☐ More than 2 years of college credits, but no 4-year college degree
☐ 4-year college degree (BA/BS)
☐ Some graduate school, but no graduate degree
☐ Master's, doctoral, or professional school degree (MA/MS/PhD/MD/JD/DVM)

85. Is your spouse/significant other of Spanish/Hispanic origin or descent?

- ☐ No (not Spanish/Hispanic) ☐ Yes, Cuban
☐ Yes, Mexican ☐ Yes, other Spanish/Hispanic
☐ Mexican American/Chicano ☐ (Please specify) _____
☐ Yes, Puerto Rican

86. What race does your spouse/significant other consider himself/herself to be?

- ☐ White ☐ Asian or Pacific Islander
☐ Black or African American ☐ Other race (Please specify) _____
☐ Indian (American), Eskimo or Aleut

87. How old was your spouse/significant other on his/her last birthday?

AGE

1
2
3
4
5
6
7
8
9

88. How tall is your spouse/significant other without shoes?

FEET INCHES

4	0
5	1
6	2
	3
	4
	5
	6
	7
	8
	9

89. How much (in lbs.) does your significant other weigh without shoes?

LBS

1	0
2	1
3	2
	3
	4
	5
	6
	7
	8
	9

If your spouse is pregnant, please mark her pre-pregnancy weight.

90. Is English your spouse's/significant other's first or native language?

- ☐ Yes ☐ No

91. How many times per week does your spouse/significant other exercise hard enough to make him/her sweat or breathe heavily for at least 15 to 20 minutes?

- ☐ None ☐ 5 times per week
☐ 1 time per week ☐ 6 times per week
☐ 2 times per week ☐ 7 times per week
☐ 3 times per week ☐ More than 7 times per week
☐ 4 times per week

The remaining questions are for all participants,
those who have a spouse, as well as those who do not.
These questions are specifically about you.

92. In general, how satisfied are you with your role as a parent?
- ☐ Highly dissatisfied ☐ Satisfied
☐ Dissatisfied ☐ Highly satisfied
☐ Somewhat satisfied

93. In general, how satisfied are you with the relationship you have with your child?
- ☐ Highly dissatisfied ☐ Satisfied
☐ Dissatisfied ☐ Highly satisfied
☐ Somewhat satisfied

94. Are you an active duty member of the Armed Forces?
- ☐ Yes ☐ No (If No, please go on to question #95.)
- If Yes, are you in the:
- ☐ Army ☐ Navy ☐ Marines Corps ☐ Air Force
- What is your pay grade?
- ☐ E-1 ☐ E-6 ☐ W-1 ☐ O-1 ☐ O-6
☐ E-2 ☐ E-7 ☐ W-2 ☐ O-2 ☐ O-7
☐ E-3 ☐ E-8 ☐ W-3 ☐ O-3 ☐ O-8
☐ E-4 ☐ E-9 ☐ W-4 ☐ O-4 ☐ O-9
☐ E-5 ☐ W-5 ☐ O-5 ☐ O-10

95. Are you employed outside of the Armed Forces?
- ☐ Yes ☐ No (If No, please go on to question #96.)
- If Yes, is it:
- ☐ Full time employment ☐ Part time employment

96. How much education have you completed? Mark the ONE answer that describes the HIGHEST grade or academic degree that you have COMPLETED. (Please do not include degrees from technical or trade schools.)
- ☐ Less than 12 years of school (no diploma)
☐ GED or other high school equivalency certificate
☐ High school diploma
☐ Less than 2 years of college credits, but no college degree
☐ 2-year college degree (AA/AS)
☐ More than 2 years of college credits, but no 4-year college degree
☐ 4-year college degree (BA/BS)
☐ Some graduate school, but no graduate degree
☐ Master's, doctoral, or professional school degree (MA/MS/PhD/MD/JD/DVM)

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97. Are you of Spanish/Hispanic origin or descent?
- ☐ No (not Spanish/Hispanic)
☐ Yes, Mexican/Mexican-American/Chicano
☐ Yes, Puerto Rican
☐ Yes, Cuban
☐ Yes, other Spanish/Hispanic (Please specify.)

98. What race do you consider yourself to be?
- ☐ White
☐ Black or African American
☐ Indian (American), Eskimo, or Aleut
☐ Asian or Pacific Islander
☐ Other race (Please specify.)

99. How old were you on your last birthday?

AGE ➞

0
1
2
3
4
5
6
7
8
9

100. Is English your first or native language?
- ☐ Yes ☐ No

101. Which of the following ranges best describes your total annual household income from all sources before taxes?
- ☐ Under \$5,000 ☐ \$40,000 to \$49,999
☐ \$5,000 to \$9,999 ☐ \$50,000 to \$59,999
☐ \$10,000 to \$14,999 ☐ \$60,000 to \$69,999
☐ \$15,000 to \$19,999 ☐ \$70,000 or more
☐ \$20,000 to \$29,999 ☐ Don't know/unsure
☐ \$30,000 to \$39,999

Thank you very much for
completing this survey!

We would be interested in any comments you may have that you think would help us in our study of the health and nutrition of children in military families. We have provided a sheet for comments. Please return it in the envelope with your questionnaire.



B. Characteristics of the Sample

Demographics of Parents

Table 1
Family Household Structure by Rank

	Jr. Enlisted (n = 716)	Sr. Enlisted (n = 2907)	Officer (n = 799)
Married	89%	94%	98%
Single	7%	4%	2%
Other	4%	2%	1%

Note:

Chi-square Analysis

Rank [χ^2 (4, n = 4422) = 50.606, $p < .001$].

Table 2
Employment Status
by Rank, Family Housing & Duty Location

	Jr. Enlisted (n = 725)	Sr. Enlisted (n = 2945)	Officer (n = 806)	On Base/Post (n = 1959)	Off Base/Post (n = 2490)	CONUS (n = 3524)	OCONUS (n = 950)
One Parent Working	61%	53%	70%	60%	55%	56%	62%
Two Parents Working	39%	47%	30%	40%	45%	44%	38%

Note:

Chi-square Analyses

Rank [χ^2 (2, n = 4477) = 76.162, $p < .001$].

Family Housing [χ^2 (1, n = 4449) = 11.761, $p < .01$].

Duty Location [χ^2 (1, n = 4472) = 9.391, $p < .01$].

Residence of the Family

Table 3
Family Housing by Service

	Army (n = 1350)	Navy (n = 1213)	Marine Corps (n = 497)	Air Force (n = 1316)
On Base/Post	44%	33%	54%	52%
Off Base/Post	56%	67%	47%	48%

Note:

Chi-square Analysis

Service [χ^2 (3, n = 4376) = 110.832, $p < .001$].

Table 4
Duty Location by Rank

	Jr. Enlisted (n = 717)	Sr. Enlisted (n = 2923)	Officer (n = 798)
CONUS	83%	79%	75%
OCONUS	17%	21%	25%

Note:

Chi-square Analysis

Rank [χ^2 (2, n = 4439) = 16.737, $p < .001$].

Family Separation

Table 5
Spousal Separation by Service

	Army (n = 1375)	Navy (n = 1231)	Marine Corps (n = 501)	Air Force (n = 1328)
Spouse Separated	14%	10%	11%	7%

Note:

Chi-square Analysis

Service [χ^2 (3, n = 4228) = 41.378, $p < .001$].

Table 6
Spousal Separation by Rank & Family Housing

	Jr. Enlisted (n = 668)	Sr. Enlisted (n = 2805)	Officer (n = 791)	On Base/Post (n = 1876)	Off Base/Post (n = 2375)
Spouse Separated	15%	11%	8%	9%	12%

Note:

Chi-square Analyses

Rank [χ^2 (2, n = 4263) = 38.171, $p < .001$].

Family Housing [χ^2 (1, n = 4251) = 20.374, $p < .001$].

Table 7
Parent-Child Separation by Service

	Army (n = 1325)	Navy (n = 1186)	Marine Corps (n = 487)	Air Force (n = 1286)
Child Separated	15%	12%	13%	8%
Child Not Separated	85%	87%	87%	92%

Note:

Chi-square Analysis

Service [χ^2 (3, n = 4284) = 36.483, $p < .001$].

Table 8
Parent-Child Separation by Rank & Family Housing

	Jr. Enlisted (n = 706)	Sr. Enlisted (n = 2844)	Officer (n = 770)	On Base/Post (n = 1919)	Off Base/Post (n = 2397)
Child Separated	18%	12%	8%	10%	14%
Child Not Separated	82%	88%	92%	90%	86%

Note:

Chi-square Analyses

Rank [χ^2 (2, n = 4320) = 38.963, $p < .001$].

Family Housing [χ^2 (1, n = 4316) = 14.725, $p < .01$].

Number of Moves

Table 9
Time at Present Location by Service and Rank

	Army (n = 1355)	Navy (n = 1212)	Marine Corps (n = 497)	Air Force (n = 1311)	Jr. Enlisted (n = 709)	Sr. Enlisted (n = 2906)	Officer (n = 800)
Less than 3 months	7%	6%	9%	5%	7%	6%	7%
3 to 6 months	8%	6%	7%	4%	7%	6%	6%
6 months to 1 year	19%	14%	19%	14%	18%	14%	23%
1 to 2 years	25%	24%	20%	24%	27%	23%	25%
2 to 3 years	22%	21%	20%	20%	19%	22%	21%
3 years or more	20%	30%	25%	33%	23%	30%	18%

Note:

Kruskal Wallis Analyses

Service [χ^2 (df=3) = 80.991, $p < .001$].

Rank [χ^2 (df=2) = 74.904, $p < .001$].

Table 10
Time at Present Location by Family Housing, Employment Status &
Day Care/Preschool Attendance

	On Base/Post (n = 1947)	Off Base/Post (n = 2473)	Two Parents Working (n = 1903)	One Parent Working (n = 2548)	Attends Day Care (n = 3013)	Does Not Attend (n = 1426)
Less than 3 months	5%	8%	4%	8%	5%	9%
3 to 6 months	5%	7%	5%	7%	5%	8%
6 months to 1 year	16%	17%	14%	18%	16%	17%
1 to 2 years	25%	23%	22%	25%	24%	24%
2 to 3 years	24%	19%	22%	20%	22%	19%
3 years or more	26%	27%	33%	22%	28%	24%

Note:

Mann-Whitney U Analyses

Family Housing ($Z = -2.744$, $p < .01$).

Employment Status ($Z = -10.242$, $p < .001$).

Day Care Attendance ($Z = -6.184$, $p < .001$).

Table 11
Number of Moves due to PCS by Service, Rank & Duty Location

Service	Mean	n	Rank	Mean	n	Duty Location	Mean	n
Army	1.80	1363	Jr. Enlisted	1.42	719	CONUS	1.53	3513
Navy	1.48	1221	Sr. Enlisted	1.52	2924	OCONUS	1.72	950
Marines	1.46	500	Officer	1.89	799			
Air Force	1.39	1319						

Note:

One-way ANOVA

Service [$F(3,4398)=36.960$, $p<.001$], d value of .37, small to medium effect size.

Rank [$F(2,4442)=43.795$, $p<.001$], d value of .43, medium effect size.

Duty Location [$F(1,4459)=22.416$, $p<.001$], d value of .17, small effect size.

Table 12
Number of Moves due to PCS by
Employment Status and Sure Start/
Head Start Enrollment & Eligibility

Employment Status	Mean	n	Sure Start/ Head Start	Mean	n
Two Parents Working	1.46	1917	Enrolled	1.78	216
One Parent Working	1.65	2560	Eligible Not Enrolled	1.53	1607
			Not Eligible	1.57	2527

Note:

One-way ANOVA

Employment Status [$F(1,4475)=31.542, p<.001$], d value of .17, small effect size.

Sure Start/Head Start [$F(2,4347)=4.950, p<.01$], d value of .23, small effect size.

C. Diet And Eating Habits

Family Cooking & Shopping

Table 1
Family Cooking by Service

	Army (n = 1325)	Navy (n = 1186)	Marine Corps (n = 487)	Air Force (n = 1286)
Father Does	6%	7%	3%	6%
Mother Does	70%	62%	72%	64%
Both Parents	23%	29%	22%	29%
Other	2%	2%	3%	1%

Note:

Chi-square Analysis

Service [χ^2 (9, n = 4396) = 37.497, $p < .001$].

Table 2
Family Cooking by Rank, Employment Status and Duty Location

	Jr. Enlisted (n=718)	Sr. Enlisted (n=2916)	Officer (n=804)	Two Parents Working (n=1908)	One Parent Working (n=2563)	CONUS (n=3491)	OCONUS (n=947)
Father Does	6%	6%	4%	8%	5%	6%	5%
Mother Does	62%	64%	78%	57%	74%	65%	71%
Both Parents	28%	28%	18%	34%	20%	27%	22%
Other	4%	1%	1%	2%	1%	2%	1%

Note:

Chi-square Analyses

Rank [χ^2 (6, n = 4438) = 87.623, $p < .001$].

Employment Status [χ^2 (3, n = 4470) = 151.246, $p < .001$].

Duty Location [χ^2 (3, n = 4438) = 11.596, $p < .01$].

Table 3
Family Shopping by Rank, Employment Status and Sure Start/
Head Start Enrollment & Eligibility

	Jr. Enlisted (n=723)	Sr. Enlisted (n=2936)	Officer (n=805)	Two Parents Working (n=1922)	One Parent Working (n=2576)	Enrolled Sure Start/ Head Start (n=215)	Eligible Not Enrolled (n=1614)	Not Eligible (n=2539)
Father Does	5%	7%	7%	7%	6%	8%	8%	5%
Mother Does	57%	65%	78%	62%	70%	60%	62%	70%
Both Parents	34%	28%	15%	31%	23%	30%	28%	25%
Other	4%	1%	1%	1%	1%	2%	2%	0%

Note:

Chi-square Analyses

Rank [χ^2 (6, n = 4464) = 123.512, $p < .001$].

Employment Status [χ^2 (3, n = 4500) = 38.498, $p < .001$].

Sure Start/Head Start [χ^2 (6, n = 4368) = 47.403, $p < .001$].

Family's Food Habits

Table 4
Non-typical American Diet by Service

	Army (n = 1336)	Navy (n = 1201)	Marine Corps (n = 490)	Air Force (n = 1297)
Non-Typical	9%	7%	4%	7%
Typical	91%	93%	96%	93%

Note:

Chi-square Analysis

Service [$\chi^2 = 15.435$, (3, n = 4325), $p < .01$].

Table 5
Non-typical American Diet by Duty Location and
Sure Start/Head Start

	CONUS (n = 3437)	OCONUS (n = 926)	Enrolled (n = 212)	Eligible Not Enrolled (n = 1572)	Not Eligible (n = 2493)
Non-Typical	6%	11%	8%	13%	4%
Typical	94%	89%	92%	87%	96%

Note:

Chi-square Analyses

Duty Location [$\chi^2 = 29.721$, (1, n = 4363), $p < .001$].

Sure Start/Head Start [$\chi^2 = 127.251$, (2, n = 4277), $p < .001$].

Table 6
Serve Chicken Baked or Broiled by Rank and Sure Start/
Head Start Enrollment & Eligibility

	Jr. Enlisted (n = 702)	Sr. Enlisted (n = 2867)	Officer (n = 785)	Enrolled (n = 210)	Eligible Not Enrolled (n = 1578)	Not Eligible (n = 2483)
Often, Usually, or Always	75%	74%	82%	72%	71%	79%
Sometimes, Rarely or Never	25%	26%	18%	28%	30%	21%

Note:

Kruskal Wallis Analyses

Rank [χ^2 (df=2) = 31.502, $p < .001$].

Sure Start/Head Start [χ^2 (df=2) = 47.082, $p < .001$].

Table 7
Remove Skin from Chicken by Service and Rank

	Army (n = 1299)	Navy (n = 1170)	Marine Corps (n = 476)	Air Force (n = 1269)	Jr. Enlisted (n = 682)	Sr. Enlisted (n = 2792)	Officer (n = 776)
Often, Usually, or Always	60%	70%	71%	73%	63%	65%	79%
Sometimes, Rarely or Never	40%	30%	29%	27%	37%	35%	21%

Note:

Kruskal Wallis Analyses

Service [χ^2 (df=3) = 38.431, $p < .001$].

Rank [χ^2 (df=2) = 59.132, $p < .001$].

Table 8
Remove Skin from Chicken by Sure Start/Head Start
Enrollment & Eligibility and Employment Status

	Enrolled (n = 200)	Eligible Not Enrolled (n = 1543)	Not Eligible (n = 2431)	Two Parents Working (n = 1822)	One Parent Working (n = 2463)
Often, Usually, or Always	58%	60%	73%	64%	70%
Sometimes, Rarely or Never	42%	40%	27%	36%	30%

Note:

Kruskal Wallis Analysis

Sure Start/Head Start [χ^2 (df=2) = 71.394, $p < .001$].

Mann Whitney U Analysis

Employment Status ($Z = -5.398$, $p < .001$).

Table 9
Buy Extra-lean Hamburger by Service and Rank

	Army (n = 1290)	Navy (n = 1150)	Marine Corps (n = 456)	Air Force (n = 1217)	Jr. Enlisted (n = 664)	Sr. Enlisted (n = 2752)	Officer (n = 746)
Often, Usually, or Always	69%	76%	73%	76%	65%	72%	85%
Sometimes, Rarely or Never	31%	24%	27%	24%	35%	28%	15%

Note:

Kruskal Wallis Analyses

Service [χ^2 (df=3) = 22.261, $p < .001$].

Rank [χ^2 (df=2) = 122.374, $p < .001$].

Table 10
Buy Extra-lean Hamburger by Sure Start/Head Start Enrollment & Eligibility,
Day Care/Preschool Attendance and Duty Location

	Enrolled (n = 208)	Eligible Not Enrolled (n = 1498)	Not Eligible (n = 2374)	Attends (n = 2856)	Does Not Attend (n = 1326)	CONUS (n = 3289)	OCONUS (n = 870)
Often, Usually, or Always	62%	69%	77%	75%	69%	72%	78%
Sometimes, Rarely or Never	38%	31%	23%	25%	31%	28%	22%

Note:

Kruskal Wallis Analysis

Sure Start/Head Start [χ^2 (df=2) = 50.077, $p < .001$].

Mann Whitney U Analyses

Day Care Attendance ($Z = -4.262$, $p < .001$)

Duty Location ($Z = -3.058$, $p < .01$).

Table 11
Serve Fish or Chicken
by Day Care/Preschool Attendance

	Attends (n = 2981)	Does Not Attend (n = 1407)
Often, Usually, or Always	80%	75%
Sometimes, Rarely or Never	20%	25%

Note:

Mann Whitney U Analysis

Day Care Attendance ($Z = -3.34, p < .01$).

Table 12
Serve Hot or Cold Cereal for Breakfast
by Day Care/Preschool Attendance

	Attends (n = 2975)	Does Not Attend (n = 1413)
Often, Usually, or Always	86%	89%
Sometimes, Rarely or Never	14%	11%

Note:

Mann Whitney U Analysis

Day Care Attendance ($Z = -2.896, p < .01$).

Table 13
Serve 2% Milk by
Employment Status

	Two Parents Working (n = 1793)	One Parent Working (n = 2390)
Often, Usually, or Always	57%	53%
Sometimes, Rarely or Never	43%	47%

Note:

Mann Whitney U Analysis

Employment Status ($Z = -3.12, p < .01$).

Table 14
Serve 1% or Skim Milk by Service and Rank

	Army (n = 1190)	Navy (n = 1074)	Marine Corps (n = 440)	Air Force (n = 1138)	Jr. Enlisted (n = 614)	Sr. Enlisted (n = 2533)	Officer (n = 728)
Often, Usually, or Always	20%	30%	25%	28%	19%	23%	37%
Sometimes, Rarely or Never	80%	70%	75%	72%	81%	77%	63%

Note:

Kruskal Wallis Analyses

Service [χ^2 (df=3) = 39.575, $p < .001$].

Rank [χ^2 (df=2) = 104.178, $p < .001$].

Table 15
Serve 1% or Skim Milk by Sure Start/Head Start Enrollment
& Eligibility and Duty Location

	Enrolled (n = 186)	Eligible Not Enrolled (n = 1379)	Not Eligible (n = 2241)	CONUS (n = 3056)	OCONUS (n = 818)
Often, Usually, or Always	24%	20%	29%	27%	21%
Sometimes, Rarely or Never	76%	80%	71%	73%	79%

Note:

Kruskal Wallis Analysis

Sure Start/Head Start [χ^2 (df=2) = 30.362, $p < .001$].

Mann Whitney U Analysis

Duty Location ($Z = -2.664$, $p < .01$).

Table 16
Serve Beef or Pork Hot Dogs by Rank and Sure Start/
Head Start Enrollment & Eligibility

	Jr. Enlisted (n = 695)	Sr. Enlisted (n = 2849)	Officer (n = 783)	Enrolled (n = 208)	Eligible Not Enrolled (n = 1559)	Not Eligible (n = 2475)
Often, Usually, or Always	30%	25%	14%	29%	24%	23%
Sometimes, Rarely or Never	70%	75%	86%	71%	76%	77%

Note:

Kruskal Wallis Analyses

Rank [χ^2 (df=2) = 103.080, $p < .001$].

Sure Start/Head Start [χ^2 (df=2) = 15.862, $p < .001$].

Table 17
Serve Chips as a Snack by Rank, Sure Start/Head Start Enrollment
& Eligibility, and Duty Location

	Jr. Enlisted (n = 698)	Sr. Enlisted (n = 2847)	Officer (n = 793)	Enrolled (n = 211)	Eligible Not Enrolled (n = 1562)	Not Eligible (n = 2487)	CONUS (n = 3412)	OCONUS (n = 926)
Often, Usually, or Always	32%	32%	24%	34%	33%	27%	31%	27%
Sometimes, Rarely or Never	68%	68%	76%	66%	67%	73%	69%	73%

Note:

Kruskal Wallis Analyses

Rank [χ^2 (df=2) = 25.896, $p < .001$].

Sure Start/Head Start [χ^2 (df=2) = 22.001, $p < .001$].

Mann Whitney U Analysis

Duty Location ($Z = -3.328$, $p < .01$).

Table 18
Serve Breakfast Meats by Service and Rank

	Army (n = 1306)	Navy (n = 1177)	Marine Corps (n = 479)	Air Force (n = 1265)	Jr. Enlisted (n = 690)	Sr. Enlisted (n = 2807)	Officer (n = 768)
Often, Usually, or Always	21%	17%	16%	16%	22%	20%	8%
Sometimes, Rarely or Never	79%	83%	84%	84%	78%	80%	92%

Note:

Kruskal Wallis Analyses

Service [χ^2 (df=3) = 25.705, $p < .001$].

Rank [χ^2 (df=2) = 126.812, $p < .001$].

Table 19
Serve Breakfast Meats by Sure Start/Head Start Enrollment & Eligibility,
Employment Status and Duty Location

	Enrolled (n = 211)	Eligible Not Enrolled (n = 1530)	Not Eligible (n = 2446)	Two Parents Working (n = 1835)	One Parent Working (n = 2463)	CONUS (n = 3359)	OCONUS (n = 905)
Often, Usually, or Always	23%	21%	16%	20%	17%	19%	16%
Sometimes, Rarely or Never	77%	79%	84%	80%	83%	81%	84%

Note:

Kruskal Wallis Analysis

Sure Start/Head Start [χ^2 (df=2) = 53.506, $p < .001$].

Mann Whitney U Analyses

Employment Status ($Z = -3.457$, $p < .01$).

Duty Location ($Z = -2.841$, $p < .01$).

Table 20
Serve Sweet Rolls, Danish or
Doughnuts by Employment Status

	Two Parents Working (n = 1791)	One Parent Working (n = 2441)
Often, Usually, or Always	7%	5%
Sometimes, Rarely or Never	93%	95%

Note:

Mann Whitney U Analysis

Employment Status ($Z = -4.409$, $p < .001$).

Table 21
Serve Eggs for Breakfast by Rank, Sure Start/Head Start Enrollment &
Eligibility And Day Care/Preschool Attendance

	Jr. Enlisted (n = 693)	Sr. Enlisted (n = 2831)	Officer (n = 779)	Enrolled (n = 207)	Eligible Not Enrolled (n = 1556)	Not Eligible (n = 2455)	Attends (n = 2926)	Does Not Attend (n = 1399)
Often, Usually, or Always	36%	25%	12%	31%	30%	20%	23%	27%
Sometimes, Rarely or Never	64%	75%	88%	69%	70%	80%	77%	73%

Note:

Kruskal Wallis Analyses

Rank [χ^2 (df=2) = 145.549, $p < .001$].

Sure Start/Head Start [χ^2 (df=2) = 57.312, $p < .001$].

Mann Whitney U Analysis

Day Care Attendance ($Z = -3.418$, $p < .01$).

Table 22
Serve Butter with Bread by
Duty Location

	CONUS (n = 3356)	OCONUS (n = 940)
Often, Usually, or Always	50%	45%
Sometimes, Rarely or Never	50%	55%

Note:

Mann Whitney U Analysis

Duty Location ($Z = -3.593$, $p < .001$).

Table 23
Serve Cheese As a Snack
by Day Care/Preschool Attendance

	Attends (n = 2963)	Does Not Attend (n = 1410)
Often, Usually, or Always	39%	47%
Sometimes, Rarely or Never	61%	53%

Note:

Mann Whitney U Analysis

Day Care Attendance ($Z = -4.641$, $p < .001$).

Table 24
Serve Peanut Butter Sandwiches
by Rank and Sure Start/Head Start Enrollment & Eligibility

	Jr. Enlisted (n = 686)	Sr. Enlisted (n = 2770)	Officer (n = 779)	Enrolled (n = 202)	Eligible Not Enrolled (n = 1521)	Not Eligible (n = 2437)
Often, Usually, or Always	42%	38%	44%	46%	36%	41%
Sometimes, Rarely or Never	58%	62%	56%	54%	64%	59%

Note:

Kruskal Wallis Analyses

Rank [χ^2 (df=2) = 9.590, $p < .01$].

Sure Start/Head Start [χ^2 (df=2) = 14.847, $p < .01$].

Table 25
Serve Peanut Butter Sandwiches by Employment Status,
Duty Location and Day Care/Preschool Attendance

	Two Parents Working (n = 1815)	One Parent Working (n = 2454)	CONUS (n = 3342)	OCONUS (n = 895)	Attends (n = 2881)	Does Not Attend (n = 1379)
Often, Usually, or Always	36%	42%	42%	32%	38%	43%
Sometimes, Rarely or Never	64%	58%	58%	68%	62%	57%

Note:

Mann Whitney U Analyses

Employment Status ($Z = -4.336$, $p < .001$).

Duty Location ($Z = -5.742$, $p < .001$).

Day Care Attendance ($Z = -3.449$, $p < .01$).

Servings from USDA Food Guide Pyramid

Table 26
Servings of Fruit by Service

	Army (n = 1362)	Navy (n = 1211)	Marine Corps (n = 494)	Air Force (n = 1317)
Below Guidelines	13%	14%	17%	17%
Met Guidelines	58%	60%	55%	60%
Above Guidelines	28%	26%	27%	23%

Note:

Kruskal Wallis Analysis

Service [χ^2 (df=3) = 22.579, $p < .001$]

Table 27
Servings of Vegetables by Service & Employment Status

	Army (n = 1364)	Navy (n = 1221)	Marine Corps (n = 493)	Air Force (n = 1315)	Two Parents Working (n = 1905)	One Parent Working (n = 2565)
Below Guidelines	46%	52%	54%	53%	46%	53%
Met Guidelines	39%	35%	31%	35%	39%	34%
Above Guidelines	15%	14%	15%	13%	15%	13%

Note:

Kruskal Wallis Analysis

Service [χ^2 (df=3) = 22.094, $p < .001$]

Mann Whitney U Analysis

Employment Status ($Z = -4.961$, $p < .001$)

Table 28
Servings of Vegetables by Rank & Sure Start/Head Start
Enrollment & Eligibility

	Jr. Enlisted (n = 721)	Sr. Enlisted (n = 2914)	Officer (n = 802)	Enrolled (n = 216)	Eligible Not Enrolled (n = 1605)	Not Eligible (n = 2527)
Below Guidelines	40%	49%	63%	53%	46%	53%
Met Guidelines	46%	36%	28%	31%	39%	34%
Above Guidelines	15%	15%	9%	17%	15%	13%

Note:

Kruskal Wallis Analyses

Rank [χ^2 (df=2) = 74.961, $p < .001$].

Sure Start/Head Start [χ^2 (df=2) = 12.805, $p < .01$].

Table 29
Servings of Milk or Milk Products by Service

	Army (n = 1364)	Navy (n = 1219)	Marine Corps (n = 493)	Air Force (n = 1315)
Below Guidelines	22%	25%	23%	27%
Met Guidelines	39%	43%	37%	41%
Above Guidelines	40%	32%	39%	32%

Note:

Kruskal Wallis Analysis

Service [χ^2 (df=3) = 31.846, $p < .001$].

Table 30
Servings of Milk or Milk Products by Rank & Sure Start
Enrollment & Eligibility

	Jr. Enlisted (n = 717)	Sr. Enlisted (n = 2913)	Officer (n = 803)	Enrolled (n = 216)	Eligible Not Enrolled (n = 1608)	Not Eligible (n = 2524)
Below Guidelines	20%	24%	28%	21%	23%	25%
Met Guidelines	39%	39%	46%	32%	37%	43%
Above Guidelines	41%	37%	26%	47%	39%	32%

Note:

Kruskal Wallis Analyses

Rank [χ^2 (df=2) = 42.363, $p < .001$].

Sure Start/Head Start [χ^2 (df=2) = 21.585, $p < .001$].

Table 31
Servings of Meat/Beans by Rank & Family Housing

	Jr. Enlisted (n = 712)	Sr. Enlisted (n = 2912)	Officer (n = 801)	On Base/Post (n = 1939)	Off Base/Post (n = 2470)
Below Guidelines	8%	8%	12%	7%	10%
Met Guidelines	55%	55%	63%	55%	57%
Above Guidelines	38%	37%	25%	37%	33%

Note:

Kruskal Wallis Analyses

Rank [χ^2 (df=2) = 44.685, $p < .001$].

Family Housing ($Z = -4.140$, $p < .001$).

Table 32
Servings of Meat/Beans by Sure Start/
Head Start Enrollment & Eligibility

	Enrolled (n = 214)	Eligible Not Enrolled (n = 1605)	Not Eligible (n = 2523)
Below Guidelines	4%	8%	10%
Met Guidelines	57%	52%	60%
Above Guidelines	39%	40%	31%

Note:

Kruskal Wallis Analyses

Meat/Beans - Sure Start/Head Start [χ^2 (df=2) = 45.208, $p < .001$].

Children's Eating Patterns

Table 33
Number of Breakfasts Eaten by Rank and Sure Start/
Head Start Enrollment & Eligibility

	Jr. Enlisted (n = 716)	Sr. Enlisted (n = 2916)	Officer (n = 801)	Enrolled (n = 213)	Eligible Not Enrolled (n = 1607)	Not Eligible (n = 2528)
0-2 Breakfasts	4%	2%	1%	5%	3%	1%
3-5 Breakfasts	10%	11%	7%	13%	11%	9%
6-7 Breakfasts	86%	87%	93%	82%	86%	90%

Note:

Kruskal Wallis Analyses

Rank [χ^2 (df=2) = 22.011, $p < .001$].

Sure Start/Head Start [χ^2 (df=2) = 13.017, $p < .01$].

Table 34
Number of Lunches Eaten
by Rank and Sure Start/Head Start Enrollment & Eligibility

	Jr. Enlisted (n = 711)	Sr. Enlisted (n = 2887)	Officer (n = 797)	Enrolled (n = 212)	Eligible Not Enrolled (n = 1593)	Not Eligible (n = 2508)
0-2 Lunches	2%	2%	0%	3%	2%	1%
3-5 Lunches	8%	8%	5%	13%	9%	6%
6-7 Lunches	90%	90%	95%	84%	89%	93%

Note:

Kruskal Wallis Analyses

Rank [χ^2 (df=2) = 25.200, $p < .001$].

Sure Start/Head Start [χ^2 (df=2) = 30.058, $p < .001$].

Table 35
Number of Dinners Eaten by Rank & Duty Location

	Jr. Enlisted (n = 711)	Sr. Enlisted (n = 2886)	Officer (n = 795)	CONUS (n = 3458)	OCONUS (n = 932)
0-2 Dinners	1%	1%	0%	1%	0%
3-5 Dinners	4%	3%	1%	3%	4%
6-7 Dinners	95%	96%	99%	96%	96%

Note:

Kruskal Wallis Analysis

Rank [χ^2 (df=2) = 16.551, $p < .001$].

Mann-Whitney U Analysis

Duty Location ($Z = -2.632$, $p < .01$).

Children's Eating Patterns - Meals at Home

Table 36
Number of Breakfasts Eaten at Home
by Rank and Sure Start/Head Start Enrollment & Eligibility

	Jr. Enlisted (n = 708)	Sr. Enlisted (n = 2879)	Officer (n = 794)	Enrolled (n = 211)	Eligible Not Enrolled (n = 1577)	Not Eligible (n = 2512)
0-2 Breakfasts	13%	13%	6%	15%	13%	10%
3-5 Breakfasts	17%	15%	10%	19%	17%	13%
6-7 Breakfasts	70%	72%	84%	67%	71%	77%

Note:

Kruskal Wallis Analyses

Rank [χ^2 (df=2) = 41.650, $p < .001$].

Sure Start/Head Start [χ^2 (df=2) = 19.805, $p < .001$].

Table 37
Number of Breakfasts Eaten at Home
by Employment Status and Day Care/
Preschool Attendance

	Two Parents Working (n = 1880)	One Parent Working (n = 2534)	Attends (n = 2984)	Does Not Attend (n = 1418)
0-2 Breakfasts	19%	6%	16%	3%
3-5 Breakfasts	18%	12%	16%	12%
6-7 Breakfasts	63%	82%	69%	85%

Note:

Mann-Whitney U Analyses

Employment Status ($Z = -14.834$, $p < .001$)

Day Care Attendance ($Z = -11.968$, $p < .001$)

Table 38
Number of Lunches Eaten at Home by Service and Rank

	Army (n = 1339)	Navy (n = 1199)	Marine Corps (n = 487)	Air Force (n = 1297)	Jr. Enlisted (n = 708)	Sr. Enlisted (n = 2862)	Officer (n = 791)
0-2 Lunches	30%	29%	22%	30%	25%	33%	21%
3-5 Lunches	22%	23%	25%	24%	23%	21%	29%
6-7 Lunches	48%	47%	53%	46%	52%	46%	50%

Note:

Kruskal Wallis Analyses

Service [χ^2 (df=3) = 12.297, $p < .01$]

Rank [χ^2 (df=2) = 17.468, $p < .001$].

Table 39
Number of Lunches Eaten at Home by Employment
Status, Day Care/Preschool Attendance and Family Housing

	Two Parents Working (n = 1867)	One Parent Working (n = 2527)	Attends (n = 2969)	Does Not Attend (n = 1415)	On Base/Post (n = 1913)	Off Base/Post (n = 2430)
0-2 Lunches	47%	16%	40%	6%	28%	30%
3-5 Lunches	21%	25%	24%	21%	23%	23%
6-7 Lunches	32%	59%	36%	73%	49%	46%

Note:

Mann-Whitney U Analyses

Employment Status ($Z = -20.798$, $p < .001$).

Day Care Attendance ($Z = -25.906$, $p < .001$).

Family Housing ($Z = -2.745$, $p < .01$).

Table 40
Number of Dinners Eaten at Home by Rank and
Day Care/Preschool Attendance

	Jr. Enlisted (n = 710)	Sr. Enlisted (n = 2894)	Officer (n = 795)	Attends (n = 3002)	Does Not Attend (n = 1418)
0-2 Dinners	3%	2%	2%	3%	2%
3-5 Dinners	18%	17%	20%	19%	15%
6-7 Dinners	79%	80%	78%	78%	83%

Note:

Kruskal Wallis Analysis

Rank [χ^2 (df=2) = 16.209, $p < .001$].

Mann-Whitney U Analysis

Day Care Attendance ($Z = -2.982$, $p < .01$).

Family Eating Patterns during Service Member Absence

Table 41
Ate at Fast Food Restaurants by Service

	Army (n = 1307)	Navy (n = 1175)	Marine Corps (n = 476)	Air Force (n = 1235)
Ate at Fast Food	31%	31%	28%	37%

Note:

Chi-square Analysis

Service [χ^2 (3, n = 4193) = 15.732, $p < .01$].

Table 42
Ate at Fast Food Restaurants by Rank, Employment Status
and Duty Location

	Jr. Enlisted (n = 676)	Sr. Enlisted (n = 2780)	Officer (n = 776)	Two Parents Working (n = 1835)	One Parent Working (n = 2431)	CONUS (n = 3343)	OCONUS (n = 890)
Ate at Fast Food	26%	32%	41%	36%	30%	34%	28%

Note:

Chi-square Analyses

Rank [χ^2 (2, n = 4233) = 36.972, $p < .001$].

Employment Status [χ^2 (1, n = 4266) = 14.949, $p < .001$].

Duty Location [χ^2 (1, n = 4232) = 10.734, $p < .01$].

Table 43
Ate at Fast Food Restaurants by Sure Start/Head Start
Enrollment & Eligibility and Day Care/
Preschool Attendance

	Enrolled (n = 207)	Eligible Not Enrolled (n = 1481)	Not Eligible (n = 2460)	Attends (n = 2878)	Does not Attend (n = 1377)
Ate at Fast Food	33%	26%	37%	35%	28%

Note:

Chi-square Analyses

Sure Start/Head Start [χ^2 (2, n = 4149) = 52.760, $p < .001$]

Day Care Attendance [χ^2 (1, n = 4254) = 23.415, $p < .001$]

Table 44
Prepared More Packaged Foods
by Rank and Sure Start/Head Start Enrollment & Eligibility

	Jr. Enlisted (n = 676)	Sr. Enlisted (n = 2780)	Officer (n = 776)	Enrolled (n = 207)	Eligible Not Enrolled (n = 1481)	Not Eligible (n = 2460)
Prepared More Packaged Foods	46%	48%	56%	46%	39%	56%

Note:

Chi-square Analyses

Rank [χ^2 (2, n = 4232) = 19.453, $p < .001$].

Sure Start/Head Start [χ^2 (2, n = 4148) = 96.333, $p < .001$].

Parental Control of Children's Eating Habits

Table 45
Parental Control During Mealtime

Rank	Mean	n	Sure Start/ Head Start	Mean	n
Jr. Enlisted	30.37	702	Enrolled	29.94	205
Sr. Enlisted	29.77	2862	Eligible Not Enrolled	30.49	1567
Officer	28.21	792	Not Eligible	28.90	2491

Note:

One-way ANOVA

Rank [F (2, 4353) = 33.164, $p < .001$] d value of .38, showing a medium effect size.

Sure Start/Head Start [F (2, 4260) = 40.584, $p < .001$] d value of .28, showing a small effect size.

D. Physical Activity & Television Viewing

Children's Physical Activity

Table 1
Child's Weekend Physical Activity by Service

Hours/Day Weekend	Army (n = 1347)	Navy (n = 1216)	Marine Corps (n = 495)	Air Force (n = 1319)
None	0%	0%	1%	0%
Less than 1	1%	0%	0%	0%
1-2	6%	5%	4%	6%
3-4	23%	24%	19%	23%
5 or More	70%	70%	77%	71%

Note:

Kruskal Wallis Analysis

Service [χ^2 (df=3)= 13.383, $p < .01$].

Table 2
Child's Physical Activity (Weekday & Weekend) by Rank

Hours/Day	Weekday Activity			Weekend Activity		
	Jr. Enlisted (n = 718)	Sr. Enlisted (n = 2908)	Officer (n = 801)	Jr. Enlisted (n = 718)	Sr. Enlisted (n = 2897)	Officer (n = 801)
None	0%	0%	0%	0%	0%	0%
Less than 1	1%	0%	1%	1%	0%	0%
1-2	9%	11%	18%	6%	5%	9%
3-4	27%	32%	37%	16%	23%	31%
5 or More	64%	57%	45%	78%	72%	60%

Note:

Kruskal Wallis Analyses

Rank - Weekday [χ^2 (df=2)= 94.814, $p < .001$].

Rank - Weekend [χ^2 (df=2)= 77.319, $p < .001$].

Table 3
Child's Physical Activity
(Weekday & Weekend) by Duty Location

Hours/Day	Weekday		Weekend	
	CONUS (n = 3485)	OCONUS (n = 943)	CONUS (n = 3478)	OCONUS (n = 937)
None	0%	0%	0%	0%
Less than 1	1%	1%	0%	1%
1-2	11%	15%	5%	7%
3-4	32%	33%	23%	25%
5 or More	57%	52%	72%	66%

Note:

Mann Whitney U Analyses

Duty Location - Weekday ($Z = -2.931$, $p < .01$).

Duty Location - Weekend ($Z = -3.567$, $p < .001$).

Table 4
Child's Weekday Physical
Activity by Day Care/
Preschool Attendance

Hours/Day Weekday	Attends (n = 3024)	Does Not Attend (n = 1424)
None	0%	0%
Less than 1	1%	1%
1-2	12%	11%
3-4	33%	29%
5 or More	54%	60%

Note:

Mann Whitney U Analyses

Day Care Attendance ($Z = -2.936, p < .01$).

Parent's Physical Activity

Table 5
Exercise Patterns of Fathers by Service
and Rank

Service	Mean(SD)	n	Rank	Mean(SD)	n
Army	4.51(1.77)	1319	Jr. Enlisted	4.14(1.94)	679
Navy	3.40(1.85)	1183	Sr. Enlisted	3.74(1.92)	2852
Marines	4.41(1.79)	496	Officer	3.85(1.81)	792
Air Force	3.19(1.86)	1287			

Note:

One-way ANOVA

Service [$F(3,4280)=151.549, p < .001$], d value of .71, showing a large effect size.

Rank [$F(2,4321)=12.089, p < .001$], d value of .21, showing a small effect size

Table 6
Exercise Patterns of Mothers
by Rank and Day Care/Preschool Attendance

Rank	Mean(SD)	n	Day Care Attendance	Mean(SD)	n
Jr. Enlisted	2.55(1.87)	710	Attends	2.50(1.91)	2965
			Does Not Attend	2.28(1.94)	1412
Sr. Enlisted	2.35(1.94)	2853			
Officer	2.58(1.89)	794			

Note:

One-way ANOVA

Rank [$F(2,4352)=6.122, p < .01$], d value of .12, showing a small effect size.

Day Care Attendance [$F(1,4376)=11.575, p < .01$], d value of .11, showing a small effect size.

Children's Television Viewing

Table 7
Child's Television Viewing (Weekday & Weekend)
by Service

Hours/Day	Army (n = 1353)	Navy (n = 1211)	Marine Corps (n = 493)	Air Force (n = 1310)
Weekdays				
None	0%	1%	1%	1%
Less than 1	5%	7%	5%	8%
1-2	36%	39%	42%	38%
3-4	43%	40%	39%	42%
5 or More	16%	13%	12%	13%
Hours/Day	Army (n = 1352)	Navy (n = 1210)	Marine Corps (n = 492)	Air Force (n = 1314)
Weekends				
None	1%	1%	2%	1%
Less than 1	5%	7%	7%	6%
1-2	34%	39%	42%	39%
3-4	43%	40%	36%	41%
5 or More	18%	13%	12%	15%

Note:

Kruskal Wallis Analyses

Service - Weekday [χ^2 (df=3)= 22.090, $p < .001$].

Service - Weekend [χ^2 (df=3)= 34.992, $p < .001$].

Table 8
Child's Television Viewing (Weekday & Weekend) by Rank

Hours/Day	Weekday			Weekend		
	Jr. Enlisted (n = 714)	Sr. Enlisted (n = 2892)	Officer (n = 803)	Jr. Enlisted (n = 715)	Sr. Enlisted (n = 2895)	Officer (n = 800)
None	1%	1%	2%	1%	1%	1%
Less than 1	4%	6%	9%	5%	5%	8%
1-2	32%	37%	45%	37%	35%	46%
3-4	46%	42%	36%	41%	43%	35%
5 or More	18%	15%	9%	17%	16%	9%

Note:

Kruskal Wallis Analyses

Rank - Weekday [χ^2 (df=2)= 64.203, $p < .001$].

Rank - Weekend [χ^2 (df=2)= 60.671, $p < .001$].

Table 9
Child's Television Viewing (Weekday &
Weekend) by Employment Status

Hours/Day	Weekdays		Weekends	
	Two Parents Working (n = 1895)	One Parent Working (n = 2548)	Two Parents Working (n = 1900)	One Parent Working (n = 2544)
None	1%	1%	1%	1%
Less than 1	7%	6%	5%	6%
1-2	41%	36%	33%	41%
3-4	38%	44%	43%	39%
5 or More	14%	14%	19%	12%

Note:

Mann Whitney U Analyses

Employment Status - Weekday ($Z = -2.712, p < .01$),

Employment Status - Weekend ($Z = -7.326, p < .001$).

Table 10
Child's Television Viewing (Weekday & Weekend) by Day Care/Preschool
Attendance and Sure Start/Head Start Enrollment & Eligibility

Hours/Day	Weekdays		Weekends		Weekends		
	Attends (n = 3011)	Does Not Attend (n = 1421)	Attends (n = 3012)	Does Not Attend (n = 1421)	Enrolled (n = 216)	Eligible not Enrolled (n = 1591)	Not Eligible (n = 2513)
None	1%	1%	1%	1%	2%	1%	1%
Less than 1	7%	5%	5%	7%	4%	5%	6%
1-2	42%	29%	35%	42%	30%	35%	40%
3-4	38%	48%	42%	38%	44%	42%	40%
5 or More	12%	18%	16%	12%	19%	17%	14%

Note:

Mann Whitney U Analyses

Day Care Attendance - Weekday ($Z = -9.897, p < .001$).

Day Care Attendance - Weekend ($Z = -5.614, p < .001$).

Note:

Kruskal Wallis Analysis

Sure Start/Head Start - Weekend [χ^2 (df=2)= 21.491, $p < .001$].

Table 11
Snacking While Watching Television
by Rank

Times Per Week	Jr. Enlisted (n = 720)	Sr. Enlisted (n = 2923)	Officer (n = 803)
Rarely or Never	28%	29%	34%
Sometimes	60%	60%	57%
Usually	12%	10%	8%
Always	1%	1%	1%

Note:

Kruskal Wallis Analysis

Rank [χ^2 (df=2)= 16.505, $p < .001$].

E. Weight Status

Children's Weight Status

Table 1
Weight by Height by Service

	Army (n = 1126)	Navy (n = 1024)	Marine Corps (n = 423)	Air Force (n = 1083)
<= 5 th	13%	8%	14%	13%
6 th - 10 th	3%	4%	7%	4%
11 th - 25 th	10%	12%	10%	13%
26 th - 50 th	16%	16%	19%	16%
51 st - 75 th	20%	20%	20%	17%
76 th - 90 th	14%	13%	12%	14%
91 st - 95 th	8%	7%	5%	8%
> 95 th	17%	19%	14%	15%

Note:

Kruskal Wallis Analysis

Service [χ^2 (df=3) = 19.837, $p < .001$].

Parent's Weight Status

Table 2
Father's BMI by Service

	Male BMI Cut-off*	Army (n = 1247)	Navy (n = 1129)	Marine Corps (n = 467)	Air Force (n = 1230)
Underweight	< 20.7	4%	5%	6%	4%
Acceptable Weight	20.7 - 27.7	79%	68%	82%	74%
Overweight	27.8 - 31.0	14%	20%	10%	18%
Severe Overweight	>= 31.1	3%	6%	2%	4%

* Brownell & Fairburn, 1995

Note:

Kruskal Wallis Analysis

Service [χ^2 (df=3) = 29.896, $p < .001$].

Table 3
Father's BMI by Rank

	Male BMI Cut-off*	Jr. Enlisted (n = 643)	Sr. Enlisted (n = 2715)	Officer (n = 752)
Underweight	< 20.7	6%	4%	4%
Acceptable Weight	20.7 - 27.7	74%	73%	81%
Overweight	27.8 - 31.0	15%	18%	13%
Severe Overweight	>= 31.1	4%	4%	3%

* Brownell & Fairburn, 1995

Note:

Kruskal Wallis Analysis

Rank [χ^2 (df=2) = 27.185, $p < .001$].

Table 4
Mother's BMI by Service

	Female BMI Cut-off*	Army (n = 1270)	Navy (n = 1129)	Marine Corps (n = 462)	Air Force (n = 1228)
Underweight	< 19.1	9%	9%	14%	9%
Acceptable Weight	19.1 - 27.2	67%	65%	69%	70%
Overweight	27.3 - 32.2	17%	19%	12%	13%
Severe Overweight	>= 32.3	8%	7%	6%	7%

* Brownell & Fairburn, 1995

Note:

Kruskal Wallis Analysis

Service [χ^2 (df=3) = 27.149, $p < .001$].

Table 5
Mother's BMI by Rank

	Female BMI Cut-off*	Jr. Enlisted (n = 660)	Sr. Enlisted (n = 2709)	Officer (n = 757)
Underweight	< 19.1	9%	10%	9%
Acceptable Weight	19.1 - 27.2	64%	65%	78%
Overweight	27.3 - 32.2	15%	17%	12%
Severe Overweight	>= 32.3	12%	8%	2%

* Brownell & Fairburn, 1995

Note:

Kruskal Wallis Analysis

Rank [χ^2 (df=2) = 38.025, $p < .001$].

F. Environmental Tobacco Smoke Exposure

Table 1
Environmental Tobacco Smoke Exposure
by Service

	Army (n = 1375)	Navy (n = 1231)	Marine Corps (n = 501)	Air Force (n = 1328)
Exposed ETS	43%	39%	32%	35%

Note:

Chi-square Analysis

Service [$\chi^2 = 29.186$, (3, n = 4435), $p < .001$].

Table 2
Environmental Tobacco Smoke Exposure
by Rank and Sure Start/Head Start Enrollment & Eligibility

	Jr. Enlisted (n = 725)	Sr. Enlisted (n = 2945)	Officer (n = 807)	Enrolled (n = 216)	Eligible Not Enrolled (n = 1618)	Not Eligible (n = 2544)
Exposed ETS	50%	42%	18%	52%	44%	34%

Note:

Chi-square Analyses

Rank [$\chi^2 = 195.975$, (2, n = 4477), $p < .001$].

Sure Start/Head Start [$\chi^2 = 55.128$, (2, n = 4378), $p < .001$].

Table 3
Child Resided with a Smoker by Service

	Army (n = 1361)	Navy (n = 1222)	Marine Corps (n = 499)	Air Force (n = 1315)
Smoker in Home	33%	34%	25%	27%

Note:

Chi-square Analysis

Service [$\chi^2 = 21.973$, (3, n = 4397), $p < .001$].

Table 4
Child Resided with a Smoker
by Rank and Sure Start/Head Start Enrollment & Eligibility

	Jr. Enlisted (n = 718)	Sr. Enlisted (n = 2921)	Officer (n = 800)	Enrolled (n = 216)	Eligible Not Enrolled (n = 1606)	Not Eligible (n = 2525)
Smoker in Home	40%	35%	10%	35%	38%	26%

Note:

Chi-square Analyses

Smoker in Home by Rank [$\chi^2 = 219.228$, (2, n = 4439), $p < .001$].

Smoker in Home by Sure Start/Head Start [$\chi^2 = 72.976$, (2, n = 4347), $p < .001$].

G. Health of the Children

Table 1
Childhood Illnesses by Service

	Army (n = 1375)	Navy (n = 1231)	Marine Corps (n = 501)	Air Force (n = 1328)
Bronchitis	13%	15%	14%	9%
Sinusitis	8%	12%	8%	8%
Asthma	9%	10%	7%	7%
Ear Infections	64%	67%	67%	70%

Note:

Chi-square Analyses

Bronchitis by Service [$\chi^2 = 28.014$, (3, n = 4435), $p < .001$].

Sinusitis by Service [$\chi^2 = 13.693$, (3, n = 4435), $p < .01$].

Asthma by Service [$\chi^2 = 12.811$, (3, n = 4435), $p < .01$].

Ear Infections by Service [$\chi^2 = 11.463$, (3, n = 4435), $p < .01$].

Table 2
Childhood Illnesses by Rank

	Jr. Enlisted (n = 725)	Sr. Enlisted (n = 2945)	Officer (n = 807)
Ear Infections	63%	66%	71%
Asthma	11%	9%	6%

Note:

Chi-square Analyses

Ear Infections by Rank [$\chi^2 = 12.829$, (2, n = 4476), $p < .01$].

Asthma by Rank [$\chi^2 = 10.558$, (2, n = 4477), $p < .01$].

Table 3
Childhood Illnesses by Sure Start/
Head Start Enrollment & Eligibility

	Enrolled (n = 216)	Eligible Not Enrolled (n = 1618)	Not Eligible (n = 2544)
Sinusitis	9%	7%	10%
Ear Infections	62%	63%	69%
Asthma	13%	11%	7%

Note:

Chi-square Analyses

Sinusitis by Sure Start/Head Start [$\chi^2 = 11.919$, (2, n = 4378), $p < .01$].

Ear Infections by Sure Start/Head Start [$\chi^2 = 19.126$, (2, n = 4378), $p < .001$].

Asthma by Sure Start/Head Start [$\chi^2 = 31.796$, (2, n = 4378), $p < .001$].

Table 4
Childhood Illnesses by
Day Care/Preschool Attendance

	Attends (n = 3053)	Does Not Attend (n = 1445)
Ear Infections	68%	64%

Note:

Chi-square Analysis

Ear Infections by Day Care Attendance [$\chi^2 = 9.132$, (1, n = 4498), $p < .01$].

Vitamins

Table 5
Vitamin Supplement by Rank and Sure Start/Head Start
Enrollment & Eligibility

	Jr. Enlisted (n = 725)	Sr. Enlisted (n = 2945)	Officer (n = 806)	Enrolled (n = 216)	Eligible Not Enrolled (n = 1618)	Not Eligible (n = 2544)
Child Takes Vitamin	52%	51%	62%	49%	51%	56%

Note:

Chi-square Analyses

Rank [$\chi^2 = 29.733$, (2, n = 4476), $p < .001$].

Sure Start/Head Start [$\chi^2 = 10.454$, (2, n = 4378), $p < .01$].

Children's Immunization

Table 6
Have Child's Vaccination Records by Rank, Employment Status
and Sure Start/Head Start Enrollment & Eligibility

	Jr. Enlisted (n = 704)	Sr. Enlisted (n = 2846)	Officer (n = 790)	Two Parents Working (n = 1869)	One Parent Working (n = 2503)	Enrolled (n = 204)	Eligible Not Enrolled (n = 1557)	Not Eligible (n = 2486)
Yes	71%	74%	78%	72%	76%	72%	72%	76%
No	29%	26%	22%	28%	24%	28%	28%	24%

Note:

Chi-square Analyses

Rank [$\chi^2 = 11.242$, (2, n = 4340), $p < .01$].

Employment Status [$\chi^2 = 8.491$, (1, n = 4374), $p < .01$].

Sure Start/Head Start [$\chi^2 = 11.257$, (2, n = 4247), $p < .01$].

Table 7
Childhood Immunizations (Hib) by Service

Hib	Army (n = 762)	Navy (n = 701)	Marine Corps (n = 290)	Air Force (n = 745)
Met Guidelines	59%	60%	64%	51%
Did Not Meet Guidelines	41%	40%	36%	49%

Note:

Chi-square Analysis

Service [$\chi^2 = 20.807$, (3, n = 2498), $p < .001$].

Table 8
Childhood Immunizations (DTP) by
Parental Rank

Hib	Jr. Enlisted (n = 369)	Sr. Enlisted (n = 1772)	Officers (n = 561)
Met Guidelines	70%	74%	80%
Did Not Meet Guidelines	30%	26%	20%

Note:

Chi-square Analysis

DTP: Parental Rank [$\chi^2 = 14.125$, (2, n = 2702), $p < .01$].

Table 9
Childhood Immunizations (Polio/DTP/Hib) by Employment Status

Polio	Two Parents Working (n = 1135)	One Parent Working (n = 1623)	DTP	Two Parents Working (n = 1114)	One Parent Working (n = 1611)	Hib	Two Parents Working (n = 1012)	One Parent Working (n = 1513)
Met Guidelines	66%	72%	Met Guidelines	71%	77%	Met Guidelines	54%	60%
Did Not Meet Guidelines	34%	28%	Did Not Meet Guidelines	29%	23%	Did Not Meet Guidelines	46%	40%

Note:

Chi-square Analyses

Polio: Employment Status [$\chi^2 = 11.989$, (1, n = 2759), $p < .01$].

DTP: Employment Status [$\chi^2 = 13.028$, (1, n = 2725), $p < .001$].

Hib: Employment Status [$\chi^2 = 8.142$, (1, n = 2527), $p < .01$].

Table 10
Childhood Immunizations (Polio/DTP)
by Sure Start/Head Start Enrollment & Eligibility

Polio	Enrolled (n = 140)	Eligible Not Enrolled (n = 927)	Not Eligible (n = 1624)	DTP	Enrolled (n = 139)	Eligible Not Enrolled (n = 920)	Not Eligible (n = 1600)
Met Guidelines	67%	66%	73%	Met Guidelines	72%	70%	78%
Did Not Meet Guidelines	33%	34%	27%	Did Not Meet Guidelines	28%	30%	22%

Note:

Chi-square Analyses

Polio: Sure Start/Head Start Enrollment & Eligibility [$\chi^2 = 12.028$, (2, n = 2692), $p < .001$].

DTP: Sure Start/Head Start Enrollment & Eligibility [$\chi^2 = 20.045$, (2, n = 2659), $p < .001$].

Table 11
Childhood Immunizations (Hib) by Sure
Start/Head Start Enrollment & Eligibility

Hib	Enrolled (n = 127)	Eligible Not Enrolled (n = 853)	Not Eligible (n = 1490)
Met Guidelines	53%	51%	62%
Did Not Meet Guidelines	47%	49%	38%

Note:

Chi-square Analysis

Hib: Sure Start/Head Start Enrollment & Eligibility [$\chi^2 = 25.876$, (2, n = 2470), $p < .001$].

Table 12
Childhood Immunizations (Hib) by
Day Care/Preschool Attendance

Hib	Attends (n = 1715)	Does Not Attend (n = 807)
Met Guidelines	56%	61%
Did Not Meet Guidelines	44%	39%

Note:

Chi-square Analysis

Hib: Day Care/Preschool [$\chi^2 = 7.005$, (1, n = 2523), $p < .01$].

Table 13
Childhood Immunizations
(Hep B) by Duty Location

HepB	CONUS (n = 1840)	OCONUS (n = 501)
Met Guidelines	43%	36%
Did Not Meet Guidelines	57%	64%

Note:

Chi-square Analysis

HepB: Duty Location [$\chi^2 = 7.625$, (1, n = 2341), $p < .01$].

Programming for Children with Disabilities/Handicaps

Table 14
Enrollment in EFMP by Service, Family Housing and
Day Care/Preschool Attendance

	Army (n = 1354)	Navy (n = 1223)	Marine Corps (n = 497)	Air Force (n = 1312)	On Base/Post (n = 1933)	Off Base/Post (n = 2467)	Attends (n = 3029)	Does Not Attend (n = 1429)
EFMP	9%	4%	2%	4%	7%	4%	6%	4%

Note:

Chi-square Analyses

Service [$\chi^2 = 44.444$, (3, n = 4182), $p < .001$].

Family Housing [$\chi^2 = 11.150$, (1, n = 4213), $p < .01$].

Day Care/Preschool [$\chi^2 = 8.790$, (1, n = 4250), $p < .01$].

Medical Care

Table 15
Overall Happiness with Military Medical Care
by Service

Happy with Services Overall	Army (n = 1291)	Navy (n = 1083)	Marine Corps (n = 470)	Air Force (n = 1273)
Agree	39%	44%	48%	49%
Neutral	22%	21%	20%	20%
Disagree	39%	35%	32%	31%

Note:

Kruskal Wallis Analysis

Service [χ^2 (df=3) = 30.899, $p < .001$].

Table 16
Overall Happiness with Military Medical Care by Employment Status,
Duty Location, and Family Housing

Happy with Services Overall	Two Parents Working (n = 1785)	One Parent Working (n = 2403)	CONUS (n = 3240)	OCONUS (n = 914)	On Base/Post (n = 1900)	Off Base/Post (n = 2240)
Agree	41%	46%	43%	49%	46%	42%
Neutral	22%	21%	20%	24%	21%	21%
Disagree	37%	33%	37%	27%	33%	37%

Note:

Mann-Whitney U Analyses

Employment Status ($Z = -2.672$, $p < .01$).

Duty Location ($Z = -4.519$, $p < .001$).

Family Housing ($Z = -3.309$, $p < .01$).

Dental Care

Table 17
Child Receives Dental Care by Rank, Sure Start/Head Start Enrollment &
Eligibility and Day Care/Preschool Attendance

	Jr. Enlisted (n = 720)	Sr. Enlisted (n = 2919)	Officer (n = 802)	Enrolled (n = 216)	Eligible Not Enrolled (n = 1608)	Not Eligible (n = 2533)	Attends (n = 3029)	Does Not Attend (n = 1434)
Receiving Dental Care	56%	74%	79%	81%	70%	73%	76%	64%

Note:

Chi-square Analyses

Rank [$\chi^2 = 120.137$, (2, n = 4441), $p < .001$].

Sure Start/Head Start [$\chi^2 = 13.371$, (2, n = 4357), $p < .01$].

Day Care Attendance [$\chi^2 = 66.291$, (1, n = 4463), $p < .001$].

Table 18
Satisfaction with Dental Care by Rank

	Jr. Enlisted (n = 92)	Sr. Enlisted (n = 420)	Officer (n = 148)
Satisfied	57%	76%	71%
Somewhat Satisfied	27%	17%	20%
Dissatisfied	16%	7%	9%

Note:

Kruskal Wallis Analysis

Rank [χ^2 (df=2) = 15.106, $p < .01$].

H. Use of Support Services

Support Services

Table 1
Use of Family Support Centers/
Community Service Centers by Service

	Army (n = 1336)	Navy (n = 1204)	Marine Corps (n = 494)	Air Force (n = 1304)
Use Centers	35%	33%	27%	38%

Note:

Chi-square Analysis

Service [$\chi^2 = 20.005$, (3, n = 4234), $p < .001$].

Table 2
Use of Family Support Centers/Community Service Centers by
Rank and Sure Start Enrollment & Eligibility

	Jr. Enlisted (n = 702)	Sr. Enlisted (n = 2887)	Officer (n = 788)	Enrolled (n = 208)	Eligible Not Enrolled (n = 1608)	Not Eligible (n = 2538)
Use Centers	40%	35%	28%	47%	33%	34%

Note:

Chi-square Analyses

Rank [$\chi^2 = 26.484$, (2, n = 4272), $p < .001$].

Sure Start/Head Start [$\chi^2 = 15.714$, (2, n = 4248), $p < .001$].

Table 3
Use of Family Support Centers/Community Service Centers by
Employment Status, Duty Location and Family Housing

	Two Parents Working (n = 1883)	One Parent Working (n = 2525)	CONUS (n = 3443)	OCONUS (n = 934)	On Base/Post (n = 1919)	Off Base/Post (n = 2435)
Use Centers	32%	37%	31%	48%	42%	29%

Note:

Chi-square Analyses

Employment Status [$\chi^2 = 10.972$, (1, n = 4301), $p < .01$]

Duty Location [$\chi^2 = 83.945$, (1, n = 4269), $p < .001$]

Family Housing [$\chi^2 = 64.596$, (1, n = 4251), $p < .001$].

Table 4
Use of WIC by Service and Rank

	Army (n = 1337)	Navy (n = 1196)	Marine Corps (n = 496)	Air Force (n = 1288)	Jr. Enlisted (n = 702)	Sr. Enlisted (n = 2870)	Officer (n = 781)
Use WIC	28%	19%	28%	20%	45%	23%	2%

Note:

Chi-square Analyses

Service [$\chi^2 = 44.136$, (3, n = 4085), $p < .001$].

Rank [$\chi^2 = 402.742$, (2, n = 4118), $p < .001$].

Table 5
Use WIC by Employment Status, Duty Location, and Family Housing

	Two Parents Working (n = 1879)	One Parent Working (n = 2506)	CONUS (n = 3432)	OCONUS (n = 919)	On Base/Post (n = 1905)	Off Base/Post (n = 2428)
Use WIC	17%	28%	26%	10%	27%	20%

Note:

Chi-square Analyses

Employment Status [$\chi^2 = 73.639$, (1, n = 4148), $p < .001$].

Duty Location [$\chi^2 = 69.244$, (1, n = 4119), $p < .001$].

Family Housing [$\chi^2 = 40.729$, (1, n = 4102), $p < .001$].

Table 6
Use WIC by Sure Start/Head Start Enrollment &
Eligibility and Day Care/Preschool Attendance

	Enrolled (n = 208)	Eligible Not Enrolled (n = 1600)	Not Eligible (n = 2526)	Attends (n = 2955)	Does Not Attend (n = 1418)
Use WIC	45%	26%	19%	18%	33%

Note:

Chi-square Analyses

Sure Start/Head Start [$\chi^2 = 86.746$, (1, n = 4102), $p < .001$].

Day Care Attendance [$\chi^2 = 114.576$, (1, n = 4138), $p < .001$].

Table 7
Use of Food Stamps by Service and Rank

	Army (n = 1329)	Navy (n = 1192)	Marine Corps (n = 494)	Air Force (n = 1291)	Jr. Enlisted (n = 703)	Sr. Enlisted (n = 2856)	Officer (n = 782)
Use Food Stamps	4%	1%	4%	1%	8%	2%	0%

Note:

Chi-square Analyses

Service [$\chi^2 = 44.286$, (3, n = 4099), $p < .001$].

Rank [$\chi^2 = 128.680$, (2, n = 4132), $p < .001$].

Table 8
Use Food Stamps by Employment Status and Family Housing

	Two Parents Working (n = 1881)	One Parent Working (n = 2493)	On Base/Post (n = 1891)	Off Base/Post (n = 2431)
Use Food Stamps	1%	3%	4%	1%

Note:

Chi-square Analyses

Employment Status [$\chi^2 = 19.087$, (1, n = 4161), $p < .001$].

Family Housing [$\chi^2 = 27.520$, (1, n = 4113), $p < .001$].

Table 9
Use Food Stamps by Sure Start/Head Start Enrollment &
Eligibility and Day Care/Preschool Attendance

	Enrolled (n = 204)	Eligible Not Enrolled (n = 1608)	Not Eligible (n = 2533)	Attends (n = 2951)	Does Not Attend (n = 1412)
Use Food Stamps	9%	4%	1%	1%	5%

Note:

Chi-square Analyses

Sure Start/Head Start [$\chi^2 = 69.175$, (2, n = 4133), $p < .001$].

Day Care Attendance [$\chi^2 = 37.328$, (1, n = 4151), $p < .001$].

Day Care, Preschool and Kindergarten

Table 10
Attendance at Day Care by Service

	Army (n = 1375)	Navy (n = 1231)	Marine Corps (n = 501)	Air Force (n = 1328)
Attends	28%	21%	23%	26%

Note:

Chi-square Analysis

Service [χ^2 (3, n = 4435) = 16.416, p < .01].

Table 11
Preschool and Family Care by Rank

	Preschool/Nursery School			Family Child Care Home		
	Jr. Enlisted (n = 725)	Sr. Enlisted (n = 2945)	Officer (n = 807)	Jr. Enlisted (n = 726)	Sr. Enlisted (n = 2945)	Officer (n = 807)
Attends	21%	25%	47%	10%	12%	6%

Note:

Chi-square Analyses

Rank - Preschool [χ^2 (2, n = 4477) = 174.382, p < .001].

Rank - Family Care [χ^2 (2, n = 4478) = 22.466, p < .001].

Table 12
Attendance at Programs by Employment Status & Family Housing

	Day Care		Family Child Care Home		Preschool/Nursery School	
	Two Parents Working (n = 2106)	One Parent Working (n = 2372)	Two Parents Working (n = 2106)	One Parent Working (n = 2372)	On Base/Post (n = 1960)	Off Base/Post (n = 2490)
Attends	39%	13%	18%	4%	26%	31%

Note:

Chi-square Analyses

Day Care - Employment Status [χ^2 (1, n = 4478) = 422.112, p < .001].

Family Care - Employment Status [χ^2 (1, n = 4478) = 245.688, p < .001].

Preschool - Family Housing [χ^2 (1, n = 4450) = 11.440, p < .01].

Table 13
Number of Hours by Rank & Employment Status

	Jr. Enlisted (n = 408)	Sr. Enlisted (n = 1994)	Officer (n = 618)	Two Parents Working (n = 1729)	One Parent Working (n = 1293)
Less than 20 hours	38%	37%	63%	23%	68%
20 to 40 hours	28%	31%	22%	31%	25%
More than 40 hours	34%	32%	15%	46%	7%

Note:

Chi-square Analyses

Rank [χ^2 (4, n = 3020) = 148.655, p < .001].

Employment Status [χ^2 (2, n = 3022) = 739.529, p < .001].

Table 14
Number of Hours by Family Housing &
Sure Start/Head Start Enrollment & Eligibility

	On Base/Post (n = 1327)	Off Base/Post (n = 1675)	Enrolled (n = 188)	Eligible Not Enrolled (n = 1013)	Not Eligible (n = 1745)
Less than 20 hours	46%	40%	50%	39%	43%
20 to 40 hours	27%	30%	34%	32%	26%
More than 40 hours	27%	30%	16%	28%	30%

Note:

Chi-square Analyses

Family Housing [χ^2 (2, n = 3002) = 10.311, p < .01].

Sure Start/Head Start [χ^2 (4, n = 2946) = 26.137, p < .001].

I. Family Experiences

Table 1
Satisfaction with Role as Parent
by Rank and Duty Location

	Jr. Enlisted (n = 721)	Sr. Enlisted (n = 2933)	Officer (n = 803)
Satisfied	82%	87%	89%
Somewhat Satisfied	13%	9%	7%
Dissatisfied	5%	4%	4%

Note:

Kruskal Wallis Analysis

Rank [χ^2 (df=2) = 24.402, $p < .001$]

Table 2
Satisfaction with Relationship with Child
by Rank and Sure Start/Head Start Enrollment & Eligibility

	Jr. Enlisted (n = 725)	Sr. Enlisted (n = 2934)	Officer (n = 804)	Enrolled (n = 216)	Eligible Not Enrolled (n = 1617)	Not Eligible (n = 2534)
Satisfied	82%	89%	91%	85%	86%	90%
Somewhat Satisfied	12%	7%	6%	11%	9%	6%
Dissatisfied	6%	4%	3%	4%	5%	4%

Note:

Kruskal Wallis Analyses

Rank [χ^2 (df=2) = 36.419, $p < .001$].

Sure Start/Head Start [χ^2 (df=2) = 15.810, $p < .001$].

Table 3
Sense of Family Cohesion by Rank and
Sure Start/Head Start Enrollment and Eligibility

	Mean	n		Mean	n
Junior Enlisted	16.14	720	Enrolled	16.13	214
Senior Enlisted	16.86	2899	Eligible Not Enrolled	16.65	1600
Officer	17.64	798	Not Eligible	17.09	2524

Note:

One-way ANOVA

Rank [$F(2, 4414) = 41.813$, $p < .001$], d value of .43, showing a medium effect size.

Sure Start/Head Start [$F(2, 4334) = 15.363$, $p < .001$], d value of .27, showing a small effect size.

J. Military Experiences

Table 1
Adjustment to the Demands of Being a Military Family
by Rank and Sure Start/Head Start Enrollment and Eligibility

	Jr. Enlisted (n = 717)	Sr. Enlisted (n = 2890)	Officer (n = 791)	Enrolled (n = 215)	Eligible Not Enrolled (n = 1586)	Not Eligible (n = 2506)
Not at All/ Slight Extent	23%	19%	11%	15%	20%	17%
Moderate Extent	36%	30%	26%	31%	32%	29%
Great/ Very Great Extent	41%	51%	63%	54%	48%	54%

Note:

Kruskal Wallis Analyses

Rank [χ^2 (df=2) = 70.871, $p < .001$]

Sure Start/Head Start [χ^2 (df=2) = 26.779, $p < .001$]

Table 2
Ability to Eat Meals Together as a
Family by Service

	Army (n = 1337)	Navy (n = 1196)	Marine Corps (n = 494)	Air Force (n = 1294)
Hinders	61%	63%	55%	47%
Has No Influence	29%	29%	33%	45%
Helps	10%	8%	11%	8%

Note:

Chi-square Analysis

Service [χ^2 = 101.675, (6, n = 4321), $p < .001$].

Table 3
Ability to Eat Meals Together as a
Family by Family Housing

	On Base/Post (n = 1910)	Off Base/Post (n = 2449)
Hinders	54%	60%
Has No Influence	35%	33%
Helps	11%	7%

Note:

Chi-square Analyses

Family Housing [χ^2 = 17.825, (2, n = 4359), $p < .001$].

Table 4
Ability to Do Things Together as a Family
by Service and Family Housing

	Army (n = 1336)	Navy (n = 1191)	Marine Corps (n = 493)	Air Force (n = 1289)	On Base/Post (n = 1908)	Off Base/Post (n = 2440)
Hinders	50%	56%	47%	37%	44%	50%
Has No Influence	32%	29%	34%	45%	35%	35%
Helps	18%	15%	19%	19%	21%	15%

Note:

Chi-square Analyses

Service [$\chi^2 = 108.466$, (6, n = 4309), $p < .001$].

Family Housing [$\chi^2 = 33.162$, (2, n = 4348), $p < .001$].

Table 5
Ability to Feel a Sense of Independence by Service and Rank

	Army (n = 1322)	Navy (n = 1189)	Marine Corps (n = 487)	Air Force (n = 1285)	Jr. Enlisted (n = 699)	Sr. Enlisted (n = 2845)	Officer (n = 788)
Hinders	11%	12%	9%	14%	16%	12%	7%
Has No Influence	45%	41%	41%	49%	50%	49%	37%
Helps	44%	47%	51%	37%	34%	39%	56%

Note:

Chi-square Analyses

Service [$\chi^2 = 44.169$, (6, n = 4283), $p < .001$].

Rank [$\chi^2 = 80.586$, (4, n = 4324), $p < .001$].

Table 6
Ability to Feel a Sense of Independence by Duty Location, Sure Start/Head Start
Enrollment & Eligibility, and Day Care/Preschool Attendance

	CONUS (n = 3416)	OCONUS (n = 923)	Enrolled (n = 211)	Eligible Not Enrolled (n = 1549)	Not Eligible (n = 2483)	Attends (n = 2944)	Does Not Attend (n = 1398)
Hinders	12%	14%	11%	14%	11%	11%	14%
Has No Influence	46%	39%	47%	47%	43%	44%	45%
Helps	42%	47%	42%	39%	46%	45%	41%

Note:

Chi-square Analyses

Duty Location [$\chi^2 = 13.578$, (2, n = 4339), $p < .01$].

Sure Start/Head Start [$\chi^2 = 26.055$, (4, n = 4243), $p < .001$].

Day Care Attendance [$\chi^2 = 11.602$, (2, n = 4342), $p < .01$].

Table 7
Ability to Keep Physically Fit by Service and Rank

	Army (n = 1325)	Navy (n = 1189)	Marine Corps (n = 494)	Air Force (n = 1287)	Jr. Enlisted (n = 701)	Sr. Enlisted (n = 2845)	Officer (n = 788)
Hinders	9%	14%	7%	13%	8%	12%	12%
Has No Influence	44%	52%	40%	52%	52%	49%	42%
Helps	47%	35%	53%	35%	40%	39%	46%

Note:

Chi-square Analyses

Service [$\chi^2 = 92.333$, (6, n = 4295), $p < .001$].

Rank [$\chi^2 = 22.394$, (4, n = 4334), $p < .001$].

Table 8
Ability to Keep Physically Fit by Employment Status
and Duty Location

	Two Parents Working (n = 1870)	One Parent Working (n = 2496)	CONUS (n = 3424)	OCONUS (n = 926)
Hinders	11%	11%	10%	14%
Has No Influence	46%	50%	50%	43%
Helps	43%	39%	40%	43%

Note:

Chi-square Analyses

Employment Status [$\chi^2 = 9.754$, (2, n = 4366), $p < .01$].

Duty Location [$\chi^2 = 16.429$, (2, n = 4350), $p < .001$].

Table 9
Ability to Keep Physically Fit by Sure Start/Head Start
Enrollment & Eligibility and Day Care/Preschool Attendance

	Enrolled (n = 211)	Eligible Not Enrolled (n = 1555)	Not Eligible (n = 2487)	Attends (n = 2949)	Does Not Attend (n = 1405)
Hinders	14%	11%	11%	12%	10%
Has No Influence	39%	46%	50%	46%	52%
Helps	47%	43%	39%	42%	38%

Note:

Chi-square Analyses

Sure Start/Head Start [$\chi^2 = 13.918$, (4, n = 4253), $p < .01$].

Day Care Attendance [$\chi^2 = 13.766$, (2, n = 4354), $p < .01$].

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13. ABSTRACT (Maximum 200 words): The Health and Nutrition of Children in Military Families survey was conducted by the Military Family Institute (MFI) at Marywood University. The purpose of the study was to obtain baseline data for a number of modifiable and interrelated health and nutrition behaviors of preschool children living in military families. Specific content areas included diet and eating habits, physical activity and television viewing, weight status, environmental tobacco smoke exposure, health indices including the children's immunization levels, use of support services, as well as family and military experiences. A questionnaire was sent during Summer 1996 to a world-wide stratified, probability sample of 10,691 military parents who had a child born between 1990 and 1992. Study results identified numerous strengths, concerns and implications in all content areas for the military preschoolers. While military children are similar to their civilian counterparts in many of the areas studied, this does not obviate the necessity to consistently improve the health and nutrition behaviors of these preschoolers. The Department of Defense should continue present programming, while at the same focus efforts and resources on the targeted areas of concern.				
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